CSI

THE SERVICE ECONOMY

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Services and American Competitiveness

Patrick T. Harker

"Hold the pickles!" When most people think of this thing called the service sector, the image of a "hamburger-flipper" or janitor immediately comes to mind. Such imagery is not only incorrect of the sector as a whole, but is dangerous in that it causes policy makers and business leaders to make decisions which prevent major productivity growth in this, the largest segment of our economy.

Ah, but you say, it is manufacturing that drives productivity in the economy. The problem over the past few decades is that the United States has let its lead in manufacturing slide. Services are followers; they add nothing to the economy besides the grease for the monetary system, a little entertainment, and postponement of our visit with the Grim Reaper. If we fix the manufacturing problem, the productivity problem in services will fix itself.

The facts do not support such statements. Summarizing the importance of services, Stephen Roach, senior economist at Morgan Stanley states:

> "Unfortunately, for the economy as a whole, there may be small consolation in the competitive renewal taking place in manufacturing. If services fail to carry their weight, renewed factory sector vitality simply will not be enough to return the U.S. economy to its historical growth path. This is the essence of the United States' hidden competitive challenge."

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Mr. Roach is correct. Manufacturing is indeed important and we dare not remove our foot from the productivity/quality accelerator we've been pressing for the past decade. However, any economy is a complex web of activities; the single-minded pursuit of excellence in one area will not lead to the nation's ultimate economic success. Public policy, management energy and the attention of every respectable business school has been rightfully turned to the competitive challenge in manufacturing, and we are beginning to turn the corner in this area. It is essential that we now pursue a similar effort to improve the productivity and quality of services.

The first mistake that is often made is to lump all the services together as a single industry group, both conceptually and in government statistics. While all cement manufacturers make similar products, a dog-grooming shop has little in common with a management consultant or a software developer. Services, however, are treated as a single block in the academic literature and in most government statistics (for example, the SIC codes for services are woefully inadequate in this respect). One must be very careful when discussing services to recognize the diversity that is present in this sector and thus, not to generalize from a single industry. In other words, not everyone in the service sector is "taking in dirty laundry."

Given the above caveat, how did Mr. Roach come to his conclusion? First, the sheer size of the service sector in the U.S. screams out for attention; it is 65-75 percent of GNP and 70-80 percent of employment, depending on how you count. How did it get so big? A common explanation in the press, if one reads between the lines, is that some sort of evil gremlin has stolen our manufacturing sector and left us with the "hamburger flipping" jobs. While such an argument is silly, there have been countless speeches and too many articles in which this viewpoint is present. Other proposed reasons include: transfer of jobs such as accountants and janitors from manufacturers to service sector organizations (when working for GM, the janitor is a manufacturing employee, but when ARA Services hires him/her, he/she becomes a service employee); increased regulation that leads to armies of accountants and lawyers; changing tastes of consumers toward more "service-intensive" goods; and increased customizing of goods. While these reasons can be partially supported by data, there is only one compelling reason for this rise in the service sector's share of both GNP and employment: low productivity.

Output and productivity are difficult to measure in some service industries. For example, how do you measure the productivity of a psychologist? In other industries, productivity is better defined—kilowatt-hours, ton-miles, etc. Thus, one cannot dismiss the low productivity numbers for services solely on the basis of measurement problems. These problems, however, do cause a divergence in productivity estimates. *Fortune,* in their Service 500 compilation, estimates that while productivity in manufacturing has increased 27 percent in the period 1982-90, productivity in services actually declined by 1 percent. *The Economist* estimates that service productivity has been increasing, but only by 0.6 percent. The best data come from the U.S. Commerce Department, which estimates that in the period 1979-88, productivity increased by only 0.4 percent as compared to the manufacturing sector which has achieved world-class productivity growth. No matter what figures are used, there is clearly a problem with productivity.

How does low productivity translate into the enormous growth of this sector? Professor William Baumol of Princeton and New York Universities answers this question with his concept of a *cost-disease illusion*. If the productivity in services is increasing more slowly than in manufacturing, the prices of services will rise relative to manufactured goods and more labor will be needed to produce a unit of service relative to a good. For example, if our labor productivity in services increased as rapidly as that in Japan (3.8 percent), we would have experienced a 40 percent decline in service employment. If we achieved West Germany's productivity in the period 1972-83, only 3.6 million jobs would have been created in the service sector instead of 18.7 million. It is the low productivity of services that has caused the size of this sector to explode. Productivity in services is clearly dragging down the economy.

It is important to note that this productivity slowdown not only effects traditional service firms, but manufacturers as well. As pointed out in MITs *Made in America* study, the line between traditional manufacturing and service providers is blurring. Is DEC a manufacturer? Consider the fact that they make more in providing services than in building computers, and you begin to see the point. Westinghouse? Group W Broadcasting and their financial service arms are large segments of their business. In all manufacturing enterprises, the service component is becoming vital in order to succeed in the global marketplace. As Tom Peters recently stated in his *Marketplace* segment on American Public Radio: "...a lot of quality issues are really service issues in disguise." As services become more important to manufacturers, the same "white collar" productivity problems will arise as faced by the traditional service sector.

The productivity problem we are experiencing is not only an issue for the United States. While Japan and Germany have higher productivity rates at present, they also are beginning to decline. In fact, low productivity in services is a world-wide phenomenon. (For example, consider Japanese retailing and the Canadian postal service). All developed nations face the prospect of lower standards of living unless productivity in services increases. An argument that the United States' high living standard, as measured by purchasing power parity, is due to the performance of our service sector has been put forward by William Lewis of McKinsey. Mr. Roach is right; productivity in services is indeed the competitiveness issue of the 90s.

Of course, if your goal is full employment maybe this trend isn't so bad. Consider the fact that almost all the job growth in the U.S. during the 1980s was in services. As illustrated above, large productivity growth would have led to much lower rates of employment growth. Of course, the path of full employment, low productivity would lead to disaster—working hard for nothing has never had much appeal!

The only way to improve productivity is to invest in people, technology, R&D, and organizational design and culture. Is it possible that this simple fact was embraced by manufacturers and ignored by service firms? Maybe. The more logical reason service firms have failed to adopt a "high-tech" mode of production to improve productivity lies not in the fact that services are sometimes more difficult to automate or in the ignorance of the management of service enterprises, but in the cost of capital. Lester Thurow, dean of MIT's Sloan School, argues that it is economically rational to use cheap labor instead of investing in R&D and capital in the face of high interest rates.

For example, the wages of U.S. service workers are 67 percent of wages paid to their manufacturing counterparts. In Japan the ratio is 93 percent, and in Germany it is 85 percent. Is it any wonder that investment in R&D is 20 times greater in manufacturing than in services? Part of the answer to this problem clearly lies in reducing the cost of capital in this country.

While the cost of capital is important, it does not tell the whole story. Service firms are investing; 80-85 percent of all investment in information technology (IT) occurs in service industries. If this is the case, where are the productivity increases? As the recent U.S. Department of Commerce statistics show, productivity is beginning to increase in industries such as financial services and transportation where many of these investments in IT are taking place. Still, much of this technology is wasted in the automation of bad production processes. If one thing has been learned from the quality revolution, it is that technology investments must follow a thorough understanding of a firm's production process and organization culture. Too many service enterprises attempt to automate without such knowledge, and come up empty in the process. As Juran and other quality gurus preach, "know thy process!"

The answers to the productivity problem in services lie in the hands of the government and the private sector. In terms of government responses to this competitiveness challenge, the first goal should be to recognize that there is no such thing as the "service sector"any more than there is a unified manufacturing sector. The statistics that are collected, such as all those based on SIC codes, must be revamped to face this reality. Also, there is no magic measure called *productivity*.

Organizations such as the Bureau of Labor Statistics are beginning the quest for output and productivity measures that are more meaningful than simple labor productivity and reflect the intangible nature of many service outputs. These efforts must be continued if we are to get a clear picture of the health of the economy.

The second task that the government must take on is to fight the pressure to regulate. Much of what is happening in terms of major productivity increases in certain service industries (transportation, telecommunications, financial services) is a direct consequence of the competitive pressures created by deregulation. The best thing that the government can do is to continue down the road of loosening regulations without endangering our national interests.

In addition, the government must continue to pursue trade liberalization in the GATT talks, and reduce the cost of capital. Finally, an educational system must be created that is capable of producing highly-skilled workers. A great misconception is that service workers do not need much education. If the world were all janitors, this might be true; although even in this area issues are arising, like hazardous materials and complex equipment, that require an increasingly well-educated workforce.

The private sector must also rise to meet this challenge by overcoming the downward spiral of low wages and low investment. Risks must be taken to create new methods for service delivery, but the risk of a full-employment, low-wage economy looms larger. Remember the hard-won

lessons of quality in manufacturing. It is ultimately people and the design of the production process that lead to the effective use of technology. For example, when Jan Carlzon first took over SAS in 1981, a nagging but seemingly simple problem of special meals not making their flights was causing many complaints, which translated into productivity losses as the ground personnel and flight crews had to deal with irate customers. A costly solution to this problem was proposed: create an information system to track the meals. Fortunately Carlzon and his management team recognized that a simple, low-tech solution existed—create teams of ground crews and flight attendants that would follow a flight from customer check-in to final boarding. If a meal was missing, the person at the counter would not respond "Well, it must be on the flight," and then hope for the best, but would be empowered to check to see if it was there. Not only did productivity improve with respect to the total number of employees needed to handle all the flight arrangements, but customer perception of quality skyrocketed.

The SAS story is a good example of the last point that individual service firms must recognize: do not necessarily focus on productivity. A single-minded focus on productivity without regard to the quality that is provided to the customer is the fastest way to ruin, and very often lower, productivity. Take, for example, the headache we all experience when purchasing a major appliance. First the delivery comes, usually after you have taken the whole day off because the store cannot give any idea of the delivery time. Then, a separate installer must come out, typically on a different day. Sound familiar? From the store's perspective, this a very productive system because they can schedule deliveries and installations without much slack time. For the harried customer, it is an utter disaster.

A small appliance chain in Philadelphia, American Appliance, is holding its own against the larger, national stores by its heretical act of calling to notify its customers when a delivery will be made, and sending the installer with the delivery truck. In the process, productivity actually increased. The words of Deming et al. ring as true in services as they do in manufacturing: productivity will follow a commitment to quality.

The above list of remedies to the competitiveness problem in services is not very different from that of manufacturing. There is a tremendous synergy between manufacturing and services that no rhetoric will displace. Services are here to stay, and their special needs must be recognized if we, as a nation, are to maintain our competitive position in the world.

The Wharton Conferences on Service Management, Technology and Economics will present *"The Service Productivity & Quality Challenge"* on October 23-24, 1992. Hosted by The Fishman-Davidson Center for the Study of the Service Sector, the conference will be held at the Wharton School, University of Pennsylvania in Philadelphia, Pennsylvania.

The purpose of the Wharton Conferences on management, Technology and Economics is to provide a forum in which diverse disciplines and members of various industrial or government organizations can be brought together to discuss issues of pressing need in the global service economy. The issues of productivity and quality will be the theme of the inaugural conference to be held in October.

The keynote speakers are tentatively scheduled to include Professor William Baumol from Princeton and New York Universities, Dr. William Lewis from McKinsey and Company, and a leading executive from a major service firm. In addition to these speakers, a series of parallel sessions will be held, each of which will consist of two speakers and a formal discussant.

For more information, or to obtain a registration form please write to the Fishman-Davidson Center for the Study of the Service Sector, The Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania 19104-6366; telephone: (215) 898-5544, telefax: (215) 898-3664.

SERVICES ECONOMIC HIGHLIGHTS

CSI

Allen Sinai
Chief Economist, Boston Company Economic Advisors, Inc.

The Service Economy At a Glance—Under Pressure and Struggling

- ***Services GDP Measured by Expenditures*** increased at a 1.6% rate in the third quarter, down from 2.5% in the second. Economic activity in the goods-producing sector picked up considerably, to a 1.9% rate. Excluding construction, the goods component of GDP increased 3.5% in the third quarter. Overall GDP increased 1.8%, the fastest rate of growth since mid-1989. All of these figures, however, suggest an inadequately performing economy.

- ***Personal Consumption Expenditures on Services*** were up 2.2%, following a 2.5% increase in the second quarter. Personal consumption of goods increased 2.6% in the third quarter, following no change in the second quarter and declines in the previous two. This is a bounce that won't be sustained.

- ***Private Services Exports*** and imports have increased to new record highs, but with services exports showing a larger increase, bringing the surplus on private-services trade to $11.1 billion, a record high, or a $44.4 billion annualized rate.

- ***The Services Sector Leading Index***—which leads activity by about six months—showed a 2.6% increase in November, lower than increases of 3.1% and 3% in October and September, respectively. The coincident index, reflecting current economic conditions, showed a 1.1% increase in November, following 0.4% and 0.5% in the previous two months.

- ***Services Employment*** declined 111,000 in November, the largest monthly decline since February. Almost all of the weakness was in retail trade (down 111,000), with smaller declines in wholesale trade, transportation, and government, offset by increases in the FIRE and business and health care sectors.

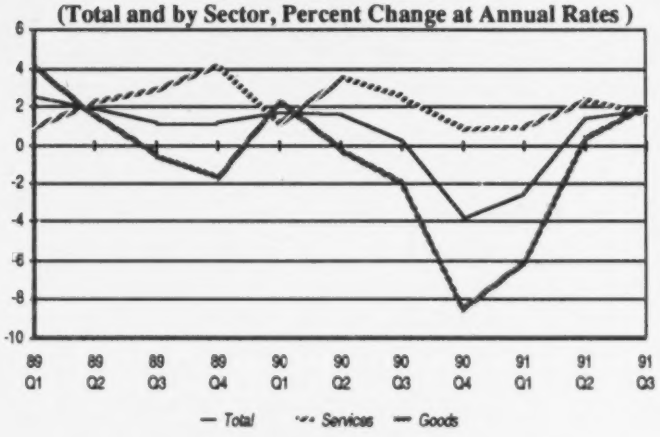
- ***Consumer Services Inflation*** continues to soften, with prices in November up 4.4% year-over-year. The corresponding figure was 6.3% in February. Inflation in the goods sector also has slowed, with prices up only 1.2% in November.

- ***The Services Stock Price Index*** was essentially flat over the three months ending November, but was up 22.8% from its level a year earlier.

Bottom Line: The service economy remains under considerable pressure, with many sectors in recession. A big squeeze is on— service industries performance should improve in the long run, but jobs, wages, prices and profits will be hurt in the short term. For the next quarter or two, services will be struggling, continuing to show uneven performance.

The service economy refers to the total economy, in which services activities are the dominant factor. The service economy comprises 68% of real production GNP and 77% of employment. Major segments are: Communications; Transportation; Public Utilities; Finance, Insurance and Real Estate; Wholesale and Retail Trade; Government; and "Service," a diverse category including Business Services, Personal Services, Professional and Health Services.

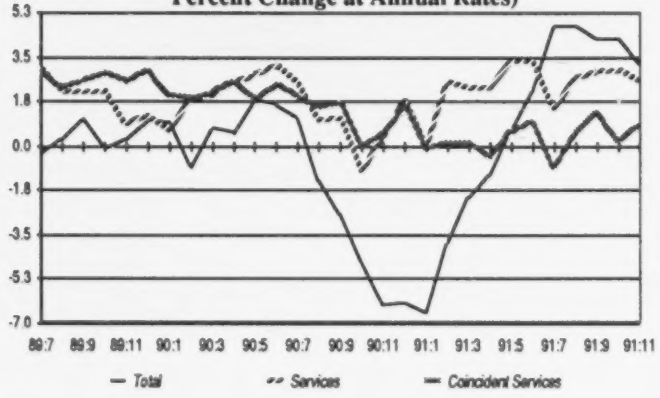
Chart 1
Real Gross Domestic Product
(Total and by Sector, Percent Change at Annual Rates)



Services GDP Growth Weakens from Second-Quarter Rate

Third-quarter services GDP—measured on the expenditure basis—increased 1.6%, down from a 2.5% rate in the previous quarter. The goods component of GDP, including construction, increased 1.9%, following a 0.4% increase in the second quarter. Goods GDP excluding construction increased 3.5%, the largest increase in more than two years. The increase in overall third-quarter GDP was 1.8%. The service economy is struggling, much weaker than trend.

Chart 2
Leading Economic Indicator Indices
(Total Economy and Service Sector, Six-Month Smoothed, Percent Change at Annual Rates)

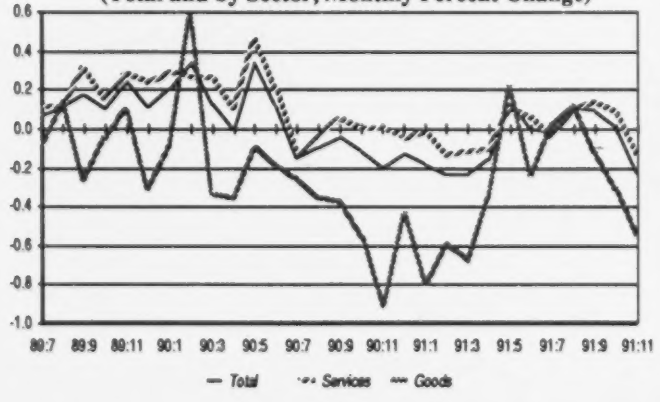


Services Leading Index Growth Slows

The leading index for the service sector increased 2.6% in November, following a 3.1% increase in October. Growth in the coincident index picked up, to 1.1% in November from 0.4% in October. The leading economic index for the overall economy increased 3.3% in November, down from 4.2% in October and 4.7% in September.

The Services Sector Indices are produced by the Center for International Business Cycle Research, Columbia University.

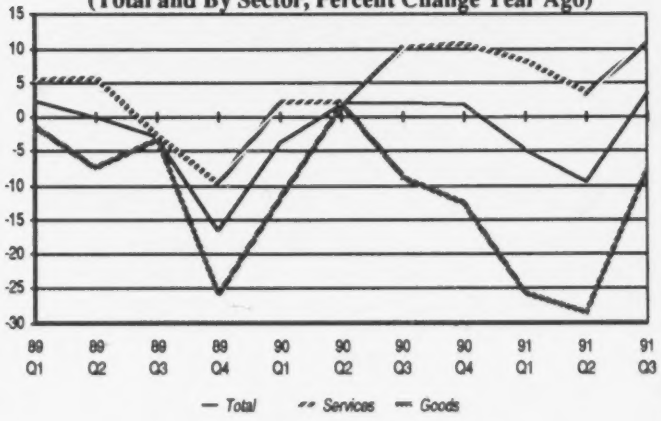
Chart 3
Employment Growth
(Total and by Sector, Monthly Percent Change)



Services Employment Declines

Service sector employment fell 111,000 in November, down 44,000 from a year earlier. Much of the weakness is in the retail trade sector, which alone posted a 111,000 drop for the month. Health care and the FIRE sectors posted increases, offsetting declines elsewhere. Employment in the goods-producing sectors which fell 130,000, following a 74,000 decline in the previous month, stands 888,000 below last year's level. A jobs shakeout is currently underway.

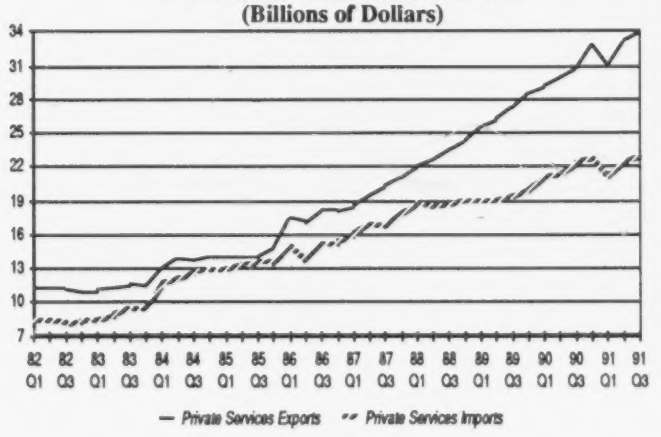
Chart 4
Corporate Profits For Domestic Industries
(Total and By Sector, Percent Change Year Ago)



Services Corporate Profits Up 10.9%

The third-quarter profits of service industries increased 10.9% from a year earlier, following a 3.4% increase in the second quarter. A doubling in profits for the financial sector from the year-earlier level accounted for most of the increase. The "other nonfinancial" category, which includes real estate, continued to post losses. Profits in the goods-producing sectors continued to fall. In the latest three-month period, goods sector profits declined 7.8%, following a 28.6% decline in the second quarter. Corporate profits for all domestic industries were up 3.9%, compared with drops in the first two quarters of the year.

Chart 5
Private Services Trade Balance
(Billions of Dollars)

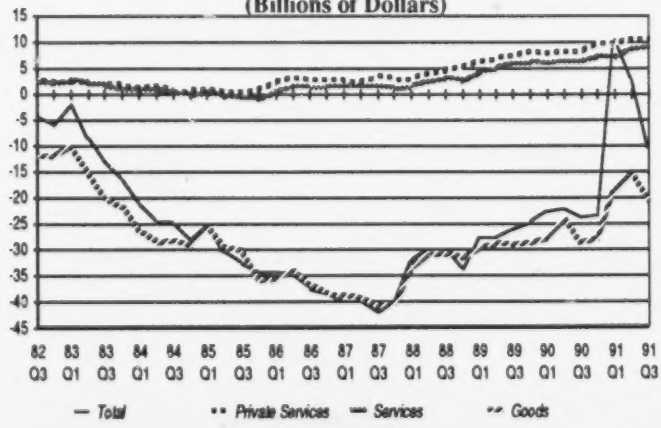


Private Services Surplus at a New Record High*

At $11.1 billion in the third quarter, the private services trade surplus increased $215 million from the second quarter. Both exports and imports of services increased to new record highs. Private services exports increased 2.3% to $34 billion, while imports rose 2.5% to $22.9 billion. Private services trade remains one of the brightest spots of the U.S. economy.

* *Private services trade refers to private nonfinancial trade flows such as travel, tourism, education, passenger fares, financial services, and fees and royalties.*

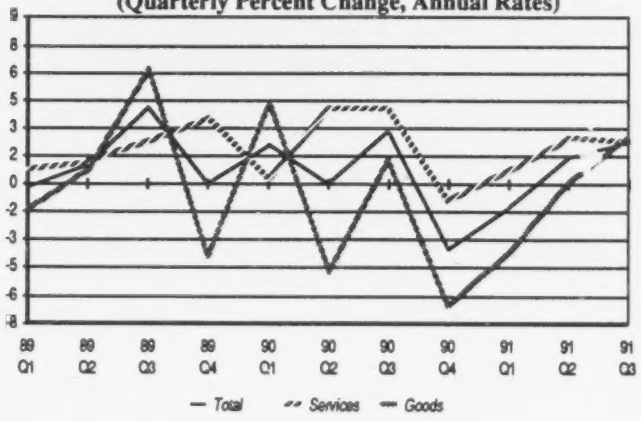
Chart 6
Current Account Balance and Components
(Billions of Dollars)



Current Account Balance Reverses to Deficit

Following two positive quarters, the current account balance posted a $10.5 billion deficit in the third quarter—the result of a larger goods deficit (-$20.5 billion vs -$15.4 billion in the second quarter) and a shift in net unilateral transfers from +$7.1 billion to -$1.9 billion in the third quarter. The total services surplus continued to increase, from $8.9 billion to $9.5 billion in the third quarter.

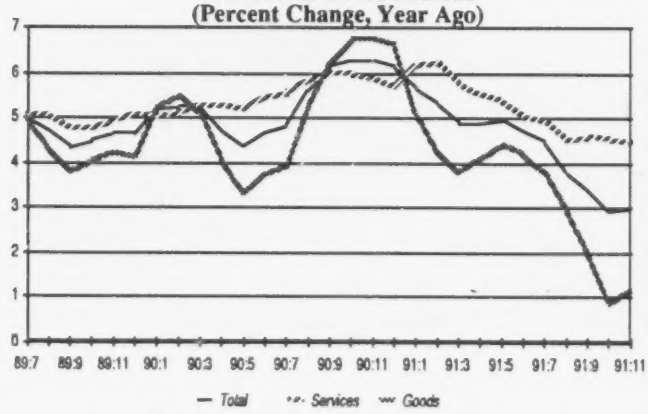
Chart 7
Real Personal Consumption Expenditures
(Quarterly Percent Change, Annual Rates)



Consumer Spending on Services Higher—But Cautious

Personal consumption expenditures on services increased an inflation-adjusted 2.2% in the third quarter of 1991, somewhat lower than the 2.5% increase in the previous quarter. Spending on goods increased 2.6% following a flat second quarter. Overall consumer spending increased 2.3% in the third quarter following a 1.4% increase in the second quarter and declines in the two previous quarters. Consumer caution has spread to services.

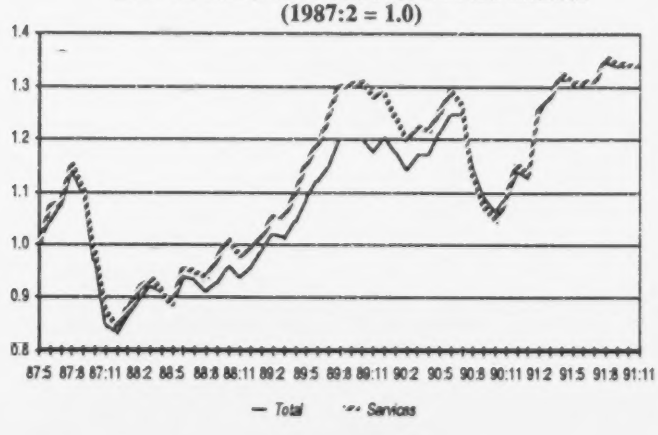
Chart 8
Consumer Price Indices
(Percent Change, Year Ago)



Services Inflation Softening

Over the twelve months ending in November, services inflation slowed to a 4.4% rate, continuing a downward trend from the 6.3% peak in February. The long-term decline in price increases was mainly the result of stable rents and lower household utility bills. Goods inflation stood at 1.2%, down from a high of 6.8% a year earlier. Overall consumer prices increased 3% from a year earlier—up marginally from 2.9% in October. If services price inflation keeps slowing, overall U.S. inflation should remain subdued.

Chart 9
S&P 500 and Services Stock Price Indices
(1987:2 = 1.0)



Services Stock Prices Pick Up

The services stock price index was at a standstill in September, October and November, following a 3.2% increase in August. Similarly, the S&P 500 stock price index also was essentially unchanged for the same three months. On a year-over-year basis, however, the S&P index was up 22.4%, while the services stock prices index was up 22.8%.

The Services Stock Price Index is based on S&P indices for 13 service industries and is compiled by the Center for International Business Cycle Research.

THE SERVICE ECONOMY—PRODUCTIVITY GROWTH ISSUES

by Allen Sinai and Zaharo Sofianou

The service economy now accounts for two-thirds to three-fourths of U.S. economic activity, depending on whether it is employment, output, or income generated that is measured. Indeed, even in the manufacturing, mining and construction industries, many companies perform a wide range of service functions despite being classified as goods-producers. Most industrialized countries post similar statistics, indicating that services account for much of their economic activity as well.

Given the increasing role services play in the national economy, they are underreported and under analyzed. The analytical framework of economic theory is based primarily on goods-producing activities. Similarly, most published economic data relate to goods-production. While the federal government has made a significant effort to improve the measurement of services, sampling of service sector companies for government reports is incomplete. Conceptual and definitional issues abound. Series coverage is woefully inadequate.

Well-measured or not, until recently the service economy, with its mild business cycles, cushioned downswings in economic activity, preventing overall economic recession. In this most recent business downturn, however, the greater integration between the goods and the service sectors resulted in a more pronounced recession for services than was experienced in previous episodes. A major restructuring appears likely to wrench the service-producing sectors, much as goods-producers were squeezed in the 1980s.

As the service economy has moved front and center, the U.S. economy has exhibited several disturbing trends—

- slower overall productivity growth, particularly in services—where the limited data suggest an extremely poor performance. Conversely, manufacturing productivity growth has been sizeable in recent years.

- a high rate of increase in unit labor costs, in part from high wage compensation in services, as well as from low productivity growth.

- low growth in the potential output, or supply-side of the U.S. economy, recently estimated by The Boston Company Economic Advisors, Inc. (TBCEA) at about 2 percent per annum, is considerably less than the historical trend of approximately 3 percent per year. Service sector productivity and efficiency are part of the problem, with job creation in the 1980s concentrated in the low-productivity sectors. In addition, disruption of the financial system, and inefficient interactions between the public and private sector contributed to the decline.

- relatively high inflation—especially in services, where prices are largely determined by fees and compensation —prevents the underlying rate of inflation from moving down to long-run optimal levels.

- an extended recession, as service companies shake-out and downsize.

Allen Sinai is Chief Economist and Zaharo Sofianou, Senior Economist of The Boston Company Economic Advisors, Inc.

Table 1
Productivity Changes Over Business Cycles
(Average Annual Growth, Percent)

Business Cycle (Trough to Business Peak)	Service-Producing	Goods-Producing	Total Nonfarm Business
1949-1953	2.6	5.5	4.0
1954-1957	2.5	3.0	2.5
1958-1960	2.2	3.0	2.5
1961-1969	3.1	2.9	3.0
1970-1973	3.2	2.4	2.8
1975-1980	1.1	0.3	0.9
1980-1981	-0.1	2.1	1.5
1982-1990*	1.4	2.9	1.5

** For Service-Producing and Goods-Producing, from 1982-1989.*

Note: Data for Service-Producing and Goods-Producing productivity are based on unpublished BLS data.

Sources: The Bureau of Labor Statistics and The Boston Company Economic Advisors, Inc.

A key ingredient in most of these trends is the issue of productivity growth in services. Many of the measured results suggest weak growth, and the costs of this weakness in the U.S. economy are considerable.

Is productivity growth in services really low? If so, why? Are there measurement problems, or is service productivity really in need of improvement?

Productivity Growth and Services—The Record

During the long business expansion from 1961 to 1969, services output per hour was reported up at a robust 3.1 percent rate per year, while productivity in goods-producing sectors grew at a slightly lower annual rate of 2.9 percent. During the expansion of the early 1970s, service productivity continued to grow by a strong per annum 3.2 percent, while output per hour in the goods-producing sector slid to only 2.4 percent. In the second half of the 1970s, however, services productivity growth slowed to a 1.1 percent annual rate, although remaining ahead of the 0.3 percent registered for goods-producing activity in the same period (Table 1).

Over 1982 to 1990, growth in output per hour for service-producing industries was lower than for the goods-producing sectors. Between 1982 and 1989, the average annual rate of productivity growth for goods producers increased to 2.9 percent, while that for services had declined to a 1.4 percent annual rate. Towards the end of the 1980s, service-sector productivity actually declined in two years, 1987 and 1989, so that between 1986 and 1989, the annual average rate of service productivity growth was a mere 0.4 percent.

The lower rate of growth for services in the most recent business cycle is in contrast to the historical pattern, where prior to 1980 the service-producing sectors had shown a decline in only one year, 1974, of 0.6 percent. During the expansion of the 1980s, however, growth in service productivity was marred by four years in which output per hour declined—in 1980 by 0.5 percent; in 1982 by 1.1 percent; in 1987 by 0.7 percent; and in 1989 by 0.4 percent.

Reasons for the Slower Growth in Service productivity

Measurement

Measurement has always been a big problem in the correct reporting of growth in service productivity—or more precisely, inflation-adjusted output per hour. Some of the concerns include whether the existing statistics best measure output, whether the price indices satisfactorily adjust for quality, and whether the hours counted are really comparable over time.

In the existing framework of data collection in the United States, measuring the output of services is difficult since the system was set up essentially to measure the production of goods and the number of jobs. There is no universal network for measuring sales of services as there is for the measurement of the sale of goods. As a result, many measures of service output are based on

proxies such as labor input, or more easily measured alternatives such as air miles traveled, tonnage shipped or number of checking transactions. While these may be the best available measures, they provide a very limited measure of actual service output.

In the transportation industry where a volume measure such as truck-miles is used, the deflation process is bypassed, and unit production is measured directly by an index based on the proxy. To the extent that the industry produces services that are growing at a different rate than the proxy, there is significant mismeasurement of total output. In industries like transportation some "service" inputs—such as use of advanced computer programs to reduce the number of truck-miles on a delivery route—will actually be interpreted as a decline in output per hour. In essence, the added productivity of more efficiently traveled miles is missed. Similarly, if checking transactions take place more quickly in banking, the current system of measurement will miss the improvement in productivity.

Even in industries where the actual value of services provided is used as the measure of output, the accuracy of the productivity measurement may be affected by the price index used to deflate to real value. Price indices are notoriously bad at measuring changes in quality, and even more so in the service sector where end products can be hard to define. The change in quality in an automobile is easier to see and measure than the improvement in quality of service at a retail store. For retail establishments, the deflator used to determine the real value of sales is generally measured by using price indices for the goods sold. These measures adjust for the quality of the product sold—but not the quality of sales performance. Faster service at a checkout register or broader product selection are examples of how a retail store might improve the quality of its customer service—but that would not be captured by the current deflation process.

Cyclical

Service-sector business cycles have, historically been mild relative to those experienced by the goods-producing sector. Part of the reason for this is the non-discretionary nature of many services, such as utilities, transportation, and health care, and the fact that consumers cannot postpone the expenditure, as they can with durable goods, such as cars and furniture. The slowdown in service-sector productivity growth started after the 1974 oil-price shock, which affected both the goods and the service-producing industries equally. During the 1975-1980 business cycle, service-sector productivity increased at a 1.1 percent rate, down from 3.2 percent in the previous business cycle. For the goods-producing sector, productivity increased at an average rate of 0.3 percent, down from 2.4 percent in the previous business cycle.

Following the oil shock, the productivity of goods-producing industries recovered, while that for service-producing industries did not. In the last business cycle, from 1982 to 1989, the rate of growth in productivity of goods-producing industries picked up to 2.9 percent a year, while that for the service-producing industries was lower, at 1.4 percent. Part of the reason for this may be the huge labor expansion that occurred in the service sector when many unemployed goods-producing workers were absorbed by service producers, and the subsequent reluctance to trim employment in the face of declining demand. Between 1983 and 1990, total labor employment in the goods-producing sector increased 0.6 percent, while that for the service-producing sector increased 3.3 percent. More recent labor reductions in service industries will likely yield results in terms of higher productivity in the next business cycle.

Other factors, such as the changing mix of the service sector, financial disarray, and inadequate education and training have also contributed to the productivity growth slowdown in services.

Changing Mix of Services Industries

Currently, the Bureau of Labor Statistics (BLS) publishes detailed productivity measures for 173 industries. Of these, 39, or about one third are service-producing. While this goods-to-service ratio may appear low, it is an improvement over the 1975 ratio, when out of 53 covered industries ten, or one fifth, were service-producing.

When looking at the disaggregated data, productivity is not in decline in all service industries. Table 2 shows the 39 service industries covered by BLS, and their rate of productivity growth since 1967. In industries like railroad transport, telephone communications, and some of retail trade, productivity shows sizable gains from 1979 to 1990, while in others such as eating and drinking places, retail food stores, bakeries, laundry and cleaning services, and automotive repair shops, the data show declines or no change.

One explanation for the decline in overall service productivity is the changing composition of the service economy. The changing mix of services offered in the economy is a key factor acting to slow the growth of overall service productivity. As more services with low productivity—such as food preparation away from home, laundry services, and child care—grow in importance, they tend to bias down the overall measure of service productivity. The growing percentage of women in the labor force has resulted in many low productivity tasks previously performed in the home—where the value of production was unmeasured—becoming market occupations. While these new services tend to be of lower productivity, there are clearly improvements on the service as it was performed in the home. A day care provider watches over several children, and one commercial food preparer serves many households, not just one.

Economic development, characterized by the growth in income and partial saturation of basic necessities, has also resulted in the expansion of low productivity services such as retail sales. Rising incomes have led households to consume more and a wider variety of goods. The growing opportunities in this and other unskilled or low skill services is a driving force behind the entry of women into the labor force. Again, while retail sales may be a lower productivity occupation than the manufacturing jobs which dominated the measured economy in earlier years, they are clearly higher in productivity than the home tasks many employees gave up to take these jobs. They are productive enough that many working women can now work at retail and pay others to provide child care, food preparation, and laundry services, through the market.

Increasing Role of Goods-Related Financial Industries

In the 1980s the financial services industry demonstrated rapid expansion in the first six or seven years of the period, and a near-collapse at the end of the decade. During the past ten years or so, the industry has experienced many changes, including the deregulation of interest rates, increased financial innovations, increased activity for the bond and stock market, a partial deregulation of the thrift industry, high leverage and excessive risk-taking, and the over expansion and subsequent decline of real estate.

These drastic changes have greatly affected the productivity growth of the service sector. In fact, the 0.7 percent decline in productivity in service industries in 1987, was largely accounted for by the collapse of the stock market in that year. The collapse of output in the securities industry did not immediately result in layoffs, and was therefore registered as a decline in productivity. The 2.5 percent rate of growth in service-sector productivity in 1988 was, again due to changes in the financial services industry, when layoffs resulting from the stock market crash raised productivity.

Troubles at thrifts, in real estate and at banks have led to reduced output in these and related areas of activity. A smoothly functioning financial system is critical to increased productivity. The importance of the financial industry will continue to be large within the service-producing sector. Also, swings in the financial sector can be expected to remain sizeable, in part because this industry caters to the goods-producing sector, which tends to experience more volatility, and partly in response to swings inherent to the financial industry itself.

Forthcoming deregulation and foreign competition, along with market innovations make financial services potentially volatile, with large swings, both up and down, that affect the service sector as a whole.

Inadequate Education

Another contributor to the slower rate of productivity in the service-producing sector is the inadequate education of many workers. Rapid expansion has led to considerable investment in high-technology equipment. Nevertheless, many schools do not provide the education needed to handle the new high-tech equipment. While workers may receive on-the-job training, this process slows productivity. As labor is an inherent part of the service sector, inadequate education and training is a significant factor affecting industry productivity.

Unfortunately, with both the federal and the local governments seeking to trim budget deficits, the U.S. educational system is likely to continue to suffer in the near future, and will be a negative factor in productivity growth as a whole, but more pronounced in the service sector.

Table 2
Output per Hour for Service Industries
(Average Annual Rates of Change, Percent)

Industry	Annual Growth Rate 1967-73	1973-79	1979-90P
Transportation			
Railroad Transport	4.9	1.4	8.3
Bus Carriers	-1.3	-1.3	-0.3
Intercity Trucking	3.6	3.2	2.7
Intercity Trucking, Freight	3.4	4.1	3.0
Air Transportation	4.6	4.8	1.3
Petroleum Pipelines	7.1	0.6	0.7
Communications			
Telephone Communications	4.6	6.8	4.7
Electric, Gas, and Sanitary Services			
Gas and Electric Utilities	4.5	0.9	0.2
Electric Utilities	5.2	1.3	1.4
Gas Utilities	2.8	-0.2	-3.7
Retail Trade			
Scrap and Waste Materials	—	—	1.0
Hardware Stores	—	2.6	1.5
Department Stores	1.9	3.2	2.3
Variety Stores	1.2	-2.7	0.9
Retail Food Stores	1.2	-0.7	-1.1
Grocery Stores	—	-0.3	-1.4
Retail Bakeries	—	-1.9	0.0
Franchised New Car Dealers	2.9	2.1	2.0
Auto and Home Supply Stores	—	2.3	2.1
Gasoline Service Stations	5.3	3.7	2.5
Apparel and Accessory Stores	3.4	2.1	2.3
Men and Boys' Clothing Stores	3.6	0.8	2.2
Women's Ready-To-Wear Stores	4.8	3.5	3.0
Family Clothing Stores	6.4	-0.1	2.9
Shoe Stores	0.0	1.9	1.3
Furniture, Home Furn., & Equip.	5.2	2.1	2.8
Furniture and Home Furnishings	5.1	1.4	0.8
Appliance, Radio, TV & Music	5.5	3.0	5.7
Household Appliance Stores	—	3.4	2.2
Radio, Television and Music	—	2.4	6.7
Eating and Drinking Places	1.0	-0.6	-0.6
Drug and Proprietary Stores	6.4	1.1	0.2
Liquor Stores	—	-0.7	-0.2
Finance, Insurance and Real Estate			
Commercial Banking	2.3	0.6	1.7
Services			
Hotels, Motels & Tourist Courts	1.8	1.4	-1.3
Laundry and Cleaning Services	0.5	-0.2	-1.1
Beauty and Barber Shops	—	1.1	0.9
Beauty Shops	—	0.3	1.2
Automotive Repair	—	-0.7	0.0

(1) Compound average annual rates of change.
(2) Labor input used is number of employees.

P = Preliminary

Source: Bureau of Labor Statistics

What is the Answer to the Service Productivity Growth Problem?

There is no single remedy for changing the pattern of productivity performance in the service sector. The intangibility of service-sector output is a big factor in the poor performance of service productivity, when measured by a system set up to gauge the output and productivity of the goods sector. As the service economy has grown to account for about 75 percent of the U.S. economy, the measurement problems associated with services have also multiplied. Improving the measurement of services economic activities—the sampling, definitions, data collection on output, quality, and improved price deflators—is an important first step.

Another factor that has probably contributed to the decline in the rate of growth of service productivity is the changing mix of the service economy. Over the past decade, low-productivity activities, previously not part of the measured economy, such as child care, food preparation, house cleaning, and laundry services, have moved out of the home and into the business world, as more and more women joined the workforce. The inclusion of these activities has probably resulted in lower overall productivity for the whole service sector. Nevertheless, despite a recorded decline in productivity, actual productivity has increased, as these activities are now more efficiently produced than previously.

The growing importance of the financial industry has also contributed to the decline in service productivity. The 1987 stock market crash played a significant role in producing overall negative productivity for services in that year.

In addition, the close integration between the goods and service sectors has produced more pronounced cycles for services than in the past. As a result, a cyclical downturn has also contributed to the decline in service productivity. And, while the cycle is at its lowest ebb, the increased capital investment undertaken by the service sector, combined with recent labor cuts, should put services in a better position to achieve higher productivity growth in the next business cycle.

Finally, while the mix in the service sector will likely change in the long run, and the financial industry will eventually go through another cycle of high productivity growth, the single most important factor that will help improve service sector productivity in the short term is better education and training of the workforce.

Table 1
Summary of the Service Economy
(Monthly Indicators)

	1991:6	1991:7	1991:8	1991:9	1991:10	1991:11	1986	1987	1988	1989	1990
Total Employment—											
Millions of Persons	108.9	108.9	109.0	109.1	109.1	108.8	99.5	102.2	105.5	108.3	110.0
Services	85.1	85.1	85.1	85.3	85.3	85.2	75.0	77.5	80.4	83.0	85.0
Goods	23.8	23.8	23.8	23.8	23.7	23.6	24.6	24.7	25.2	25.3	25.0
Total Wages and Salaries—											
Billions of Dollars	2799.4	2790.7	2805.4	2818.1	2813.3	NA	2094.8	2249.7	2431.1	2573.3	2705.3
Services	2078.4	2068.8	2079.2	2091.7	2083.5	NA	1469.2	1599.7	1734.7	1852.7	1976.0
Goods	721.0	721.9	726.2	726.4	729.8	NA	625.6	650.0	696.4	720.6	729.2
Total Compensation											
%Change, Year-Over-Year	3.3	2.3	2.8	2.6	3.0	NA	6.0	7.4	8.1	5.8	5.1
Services	5.2	3.9	4.3	4.0	4.1	NA	7.5	8.9	8.4	6.8	6.7
Goods	-2.0	-1.8	-1.1	-1.3	-0.1	NA	2.7	3.9	7.1	3.5	1.2
Consumer Price Index—All Urban											
%Change, Year-Over-Year	4.7	4.4	3.8	3.4	2.9	3.0	1.9	3.7	4.1	4.8	5.4
Services	5.0	4.9	4.5	4.6	4.5	4.4	5.0	4.1	4.6	4.9	5.5
Goods	4.2	3.8	2.9	2.0	0.9	1.2	-1.0	3.2	3.5	4.7	5.2
Services Leading Indicator Index (%)*	3.4	1.5	2.7	3.0	3.1	2.6	4.9	6.2	1.6	2.9	1.7
Leading Economic Indicator Index—Total (%)*	2.2	4.7	4.8	4.2	4.3	3.3	6.8	5.8	1.6	1.8	-0.7
Services Coincident Indicator Index (%)*	1.1	-0.7	0.7	1.5	0.4	1.1	3.3	3.6	3.8	2.7	2.0
Service Industries Stock Price Index	122.5	122.9	126.8	125.7	125.5	125.3	86.3	95.6	88.3	111.5	110.7
S&P 500 Stock Price Index	378.3	380.2	389.4	387.2	386.9	385.9	236.3	286.8	265.8	322.8	334.6

* *Growth rate expressed in six-month smoothed percent changes at annual rate.*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Center for International Business Cycle Research and The Boston Company Economic Advisors, Inc.

Table 2
Summary of the Service Economy
(Percent Change, SAAR, Except Where Indicated)

	1990:2	1990:3	1990:4	1991:1	1991:2	1991:3	1986	1987	1988	1989	1990
Gross Domestic Product											
(87 Dollars)	1.6	0.2	-3.9	-2.5	1.4	1.8	2.9	3.1	3.9	2.5	1.0
Services	3.5	2.5	0.9	0.9	2.5	1.6	3.3	3.8	3.6	2.3	2.6
Goods and Construction	-0.2	-2.0	-8.5	-6.1	0.4	1.9	2.5	2.4	4.2	2.8	-0.6
Goods	2.6	-1.1	-7.8	-2.4	1.1	3.5	2.7	3.1	5.5	3.7	-0.2
Construction	-11.3	-5.6	-11.6	-21.0	-3.1	-4.9	2.1	-0.2	-0.4	-0.9	-2.1
GNP—Product Measure											
(82 Dollars)	—	—	—	—	—	—	3.2	3.4	4.5	2.5	NA
Services	—	—	—	—	—	—	3.9	3.0	4.3	3.2	NA
Goods	—	—	—	—	—	—	1.9	4.3	4.7	1.1	NA
Manufacturing	—	—	—	—	—	—	3.1	6.1	7.7	1.3	NA
Agri./Mining/Construction	—	—	—	—	—	—	1.3	0.9	-1.4	0.6	NA
Consumption Expenditures	0.0	2.8	-3.5	-1.3	1.4	2.3	3.6	2.8	3.6	1.9	1.2
Services	4.1	4.1	-0.9	0.7	2.5	2.2	2.5	3.9	3.7	2.0	2.3
Goods	-4.7	1.3	-6.6	-3.7	0.1	2.6	4.8	1.6	3.5	1.8	0.0
Plant and Equipment Expenditures—											
Current Dollars	1.5	-0.3	-2.9	4.1	-7.9	2.5	-2.4	2.5	11.0	11.4	5.3
Services	-1.1	0.4	0.2	5.2	-8.5	17.7	3.4	2.9	8.3	11.2	5.2
Goods	6.1	-1.5	-7.9	2.4	-7.0	-19.3	-11.1	1.7	15.7	11.6	5.5
Corporate Profits—Current Dollars											
%Change, Year-Over-Year	2.0	2.2	1.8	-4.8	-9.4	3.9	2.0	11.9	12.9	-4.6	0.5
Services	2.1	10.1	10.8	8.3	3.4	10.9	21.5	-2.9	6.2	-0.6	6.1
Goods	1.9	-8.7	-12.7	-25.5	-28.6	-7.8	-25.4	45.7	22.8	-9.7	-7.6

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics and The Boston Company Economic Advisors, Inc.

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Table 3
Summary of the Service Economy
(Billions of 1987 Dollars, SAAR, Except Where Indicated)

	1990:2	1990:3	1990:4	1991:1	1991:2	1991:3	1986	1987	1988	1989	1990
Gross Domestic Product (87 Dollars)	4900.3	4903.3	4855.1	4824.0	4840.7	4862.7	4404.5	4540.0	4718.6	4836.9	4884.9
Services	2461.1	2476.3	2481.8	2487.4	2502.6	2512.3	2184.9	2267.3	2349.7	2402.8	2464.9
Goods and Construction	2439.0	2427.0	2373.4	2336.2	2338.3	2349.5	2219.5	2272.7	2368.9	2434.0	2420.0
Goods	1973.7	1968.4	1928.7	1916.9	1922.3	1938.7	1740.2	1794.5	1892.5	1961.9	1957.9
Construction	465.3	458.6	444.7	419.3	416.0	410.8	479.3	478.2	476.3	472.1	462.0
GNP—Product Measure* (82 Dollars)	—	—	—	—	—	—	3717.9	3845.3	4016.9	4117.7	NA
Services	—	—	—	—	—	—	2508.1	2583.0	2695.1	2782.0	NA
Goods	—	—	—	—	—	—	1209.8	1262.3	1321.8	1335.7	NA
Manufacturing	—	—	—	—	—	—	803.4	852.2	917.4	929.0	NA
Agri./Mining/Construction	—	—	—	—	—	—	406.4	410.1	404.4	406.7	NA
Consumption Expenditures	3258.6	3281.2	3251.8	3241.1	3252.4	3271.2	2969.1	3052.2	3162.4	3223.0	3262.6
Services	1769.6	1787.3	1783.1	1786.3	1797.2	1806.8	1576.1	1637.4	1698.5	1732.9	1773.0
Goods	1489.0	1493.9	1468.7	1454.8	1455.2	1464.4	1393.0	1414.8	1463.9	1490.1	1489.7
Plant and Equipment Expenditures— Current Dollars	534.5	534.1	530.1	535.5	524.6	527.9	399.3	409.2	454.2	506.0	532.8
Services	329.8	330.1	330.3	334.5	327.1	340.7	253.0	260.4	282.2	313.9	330.2
Goods	204.8	204.0	199.8	201.0	197.4	187.2	146.3	148.8	172.1	192.1	202.6
Corporate Profits— Current Dollars	249.9	241.1	222.3	221.4	226.3	250.4	195.2	218.4	246.5	235.2	236.5
Services	149.1	149.9	149.2	154.3	154.2	166.3	135.8	131.8	140.0	139.1	147.7
Goods	100.8	91.2	73.1	67.1	72.0	84.1	59.5	86.7	106.5	96.1	88.8
Current Account Balance— Current Dollars	-22.2	-23.9	-23.4	10.5	3.0	-10.5	-145.4	-160.2	-126.2	-106.3	-92.1
Quarterly Rates											
Services Balance	6.6	6.4	7.5	7.1	8.9	9.5	4.7	6.3	10.3	22.4	26.4
Private Services Balance **	8.5	8.5	10.1	9.8	10.8	11.1	10.7	11.4	17.4	30.1	35.1
Exports	29.9	30.8	32.8	31.0	33.2	34.0	70.6	79.4	92.4	107.5	122.7
Imports	-21.4	-22.3	-22.7	-21.1	-22.4	-22.9	-59.9	-68.0	-75.0	-77.4	-87.6
Merchandise Trade Balance	-24.1	-28.8	-27.7	-18.4	-15.4	-20.5	-145.1	-159.5	-127.0	-115.9	-108.1

* *Under revision*

** *Private Services Balance is the balance on Service exports and imports excluding receipts and payments on investments and government transactions.*

Sources: Bureau of Economic Analysis and The Boston Company Economic Advisors, Inc.

THE COALITION OF SERVICE INDUSTRIES was formed in 1982 to increase public awareness of the expanding role of the service sector in the U.S. economy. One of the priorities of the Coalition is to improve the adequacy of statistical programs in their measurement and analysis of the service sector.

THE SERVICE ECONOMY is a product of the CSI Task Force on Data Collection and Statistical Improvement. Comments or suggestions should be directed to Maria Eli of CSI, at 202/508-8622.

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Bureau of Economic Analysis Improves Picture of the U.S. Economy

Larry R. Moran

The Commerce Department's Bureau of Economic Analysis (BEA) recently made several major improvements to its estimates that present a picture of the U.S. economy. Those improvements provide a clearer and more accurate picture of recent economic developments and make BEA estimates more consistent with measures produced by other federal agencies and by many foreign countries. A description of the four most important improvements follows.

Gross Domestic Product (GDP) Has Replaced Gross National Product (GNP) as the Featured Measure of U.S. Output. (However, BEA will continue to publish estimates of GNP.)

GDP measures the value of goods and services produced within the geographic boundaries of the United States, regardless of the ownership of the labor and capital used for production. GNP measures the value of goods and services produced by labor and capital owned by U.S. residents, regardless of whether the labor and capital are located within the United States.

An example might help us understand the difference between GDP and GNP. To simplify, we can say that the value of the cars produced at a Japanese-owned factory located in the United States comes from two inputs — labor, which in our example is primarily U.S. workers, and capital, which is primarily foreign-owned plant and equipment. In this simplified example, the value of the labor input is equal to the wages and salaries that workers receive; and the value of the capital input is equal

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to the corporate profits associated with the factory ownership. The labor input is included in both GDP and GNP because it both takes place in the United States and is provided by U.S. residents. The capital input is included in GDP because the production takes place within the United States, but it is not included in GNP because the capital is not owned by U.S. residents. In contrast, for a U.S.-owned factory located in a foreign country, the labor input, which would primarily consist of non-U.S. workers, would not be included in either GDP or GNP. The value of the capital input — the profits from the U.S.-owned factory — would be included in GNP but not in GDP.

BEA has shifted emphasis to GDP as the primary measure of output for three principal reasons:

1. GDP is more nearly comparable to other measures of domestic economic activity, such as employment, the unemployment rate, productivity, industrial production, and investment in plant and equipment. These measures reflect labor and capital located within the United States, regardless of ownership.

2. GDP is the measure of output used by most countries in the world. Thus, the shift in emphasis to GDP facilitates comparisons of U.S. economic activity with that in other countries.

3. Source data for net factor income (primarily the difference between profits on U.S. investment abroad and profits on foreign investment in the United States), which is included in GNP but not GDP, are not available for advance estimates of the national economic accounts. (Advance estimates are made one month after the end of each quarter.) With the switch in emphasis to GDP, BEA makes no advance estimates of GNP, and thus no longer needs to project the volatile component of net factor income for these early quarterly estimates.

The Gross Domestic Purchases Price Index Has Replaced the GNP Price Index as the Featured Measure of U.S. Price Change.

The gross domestic purchases price index measures changes in prices of the goods and services that we, as a nation, purchase — regardless of whether they are produced in the United States or are imported; prices included in this index are those for consumer goods and services, business investment expenditures, and goods and services purchased by government. The GNP price index measures changes in prices of the goods and services that we, as a nation, produce — regardless of whether they are consumed in the United States or are exported.

The difference between the price measures can be seen if we consider the effects of a sharp increase in the price of imported petroleum. Such an increase, which would be reflected in domestic prices of such things as gasoline, would affect prices of gross domestic purchases, but not GNP prices; GNP prices reflect changes in domestic prices of gasoline that result from the production contribution of U.S. producers, but they do not reflect price changes that result from prices of

imported inputs, such as petroleum. For most purposes, it is more useful to track changes in prices paid by U.S. purchasers than changes in prices received by U.S. producers.

Constant-Dollar Output Estimates and Fixed-Weighted Price Indexes Have Been Rebased to 1987 from 1982.

Rebasing to a more current year helps estimates more accurately reflect recent changes in output and prices. An example using a two-commodity economy might help us understand how rebasing affects fixed-weighted indexes and why rebasing is done.

For simplicity, we will focus on the effect rebasing has on output measures, though it has a similar effect on price indexes. A fixed-weighted output index measures changes in output (or quantities) valued at a constant set of prices—the prices in the base year. Output measures are often presented in dollar terms and referred to as "constant-dollar output" (or "constant-dollar GDP") and also as "real output" (or "real GDP").

It is important to understand that rebasing an output index is more than just changing the year in which the index equals 100. Rebasing primarily involves changing the set of prices in which output is measured. In our example, constant-dollar GDP with year 1 as the base tells us how much more (or less) output was produced in years 2 through 6 than was produced in year 1, when for each year we value apples at the price of $5 each and bananas at $4 each. If we change the base to year 6, constant-dollar GDP tells us how much more (or less) output was produced in years 2 through 6 than was produced in year 1, when for each year we value apples at $12 each and bananas at $6 each.

Table 1 — Sample Two-Commodity Economy

	Year					
	1	2	3	4	5	6
Quantity (units)						
Apples	6	7	7	8	8	7
Bananas	5	7	8	10	11	11
Price (dollars)						
Apples	5	6	8	9	11	12
Bananas	4	4	5	5	6	6
Value (dollars)						
Apples	30	42	56	72	88	84
Bananas	20	28	40	50	66	66
GDP	50	70	96	122	154	150
Real GDP (constant dollars)						
Base, year 1	50	63	67	80	84	79
Base, year 6	102	126	132	156	162	150
Real GDP indexes						
Base, year 1	100.0	126.0	134.0	160.0	168.0	158.0
Base, year 6	68.0	84.0	88.0	104.0	108.0	100.0
GDP price indexes						
Base, year 1	100.0	112.0	146.0	158.0	192.0	204.0
Base, year 6	52.7	57.3	74.0	78.7	95.3	100.0
Percent changes						
Real GDP						
Base, year 1	....	26.0	6.3	19.4	5.0	-6.0
Base, year 6	....	23.5	4.8	18.2	3.8	-7.4
GDP price indexes						
Base, year 1	....	12.0	30.4	8.2	21.5	6.3
Base, year 6	....	8.9	29.1	6.3	21.2	4.9

How is constant dollar GDP measured? We will look at the case in which the base is year 1; thus, we will be measuring real GDP when apples cost $5 each and bananas cost $4 each. In year 1, real GDP was $50 (6 apples at 5 each for $30 plus 5 bananas at $4 each for $20); in year 2, real GDP was $63 (7 apples at $5 each for $35 plus 7 bananas at $4 each for $28). Thus, real GDP increased from $50 in year 1 to $63 in year 2, an increase of 26 percent. Real GDP with year 1 prices for subsequent years may be computed similarly. For some purposes, it is convenient to convert real GDP into an index form with the base year set equal to 100; this may be accomplished by dividing real GDP in each year by the value of GDP in the base year and then multiplying by 100. We see in Table 1 that the real GDP index with year 1 as the base was 100.0 in year 1 and 126.0 in year 2, which provided us with the same 26 percent increase we computed directly from estimates of real GDP.

Now let us pause and consider how we use real GDP indexes. Generally, we use these measures to determine growth in output. Real GDP with year 1 as the base tells us how much output increased when the goods produced are valued at year 1 prices, $5 per apple and $4 per banana. But in year 6, apples and bananas did not cost $5 and $4 respectively; instead apples cost $12 each and bananas cost $6 each. In year 1, an apple cost only 25 percent more than a banana, but in year 6 an apple cost twice as much as a banana; clearly, the relative prices of apples and bananas changed between years 1 and 6. So real GDP valued in year 1 prices, which tells us much about the growth in output between years 1 and 2, may tell us little about the growth in output between years 5 and 6.

To see how much output grew between years 5 and 6, we can shift the base year of our measure of real GDP. From Table 1, we can see that real GDP with year 6 as the base— reflecting output changes when apples are priced at $12 each and bananas are priced at $6 each — decreased 7.4 percent in year 6, a more relevant measure of the change in output than the 6.0 percent decrease shown by real GDP with year 1 as the base. Thus, as we said earlier, rebasing real GDP to a more current year provides a better measure of output growth in recent years.

A closer look at Table 1 reveals one likely effect of rebasing indexes to a more current year. Increases in real GDP valued in year 6 prices are smaller than increases in real GDP valued in year 1 prices. In general, increases in real GDP valued in prices of a more current year are smaller than increases in real GDP valued in earlier-year prices. This is because consumption, and thus output, tends to shift away from goods and services with rapidly increasing prices and toward goods and services with more slowly increasing or declining prices. Thus, the goods and services with the largest increases in output (bananas in our example) generally have smaller relative prices in the more current year.

Price indexes are rebased to a more current year for the same reason as output measures: Measures with a more current base year provide a better picture of today's economy. A fixed-weighted price index measures the changes in the price of a specific market basket of goods and services— the basket purchased in the base year. In our example, the GDP fixed-weighted price index with year 1 as the base measures changes in the price of the basket of 6 apples and 5 bananas. That index increased from 100.0 in year 1 to 112.0 in year 2, showing a 12 percent inflation rate; that inflation rate is reasonable because it represents the price increase of a basket of goods and services

similar to the one purchased in year 2. The GDP price index with year 1 as the base increased 6.3 percent between years 5 and 6. But we must ask ourselves about the relevance of the inflation rate based on the change in price of a market basket of 6 apples and 5 bananas when in year 6 the basket consisted of 7 apples and 11 bananas. The GDP fixed-weighted price index with year 6 as the base (reflecting a market basket of 7 apples and 11 bananas) increased 4.9 percent between years 5 and 6; this is a much more relevant measure of inflation than the one with year 1 as base. A price index with a less current base year is a less relevant measure of current inflation because it reflects changes in prices of goods that are no longer being purchased and does not reflect changes in prices of goods that are currently being purchased.

As with output measures, rebasing a price index to a more current base year generally reduces the size of changes. The reason for this tendency is the same as that for output measures: Consumers tend to shift purchases away from goods and services with rapidly increasing or decreasing prices. Thus, the more current the base year, the less weight is given to goods and services with rapidly increasing prices.

BEA Will Soon Publish New Alternative Measures of Output and Prices that May Be Used for Analysis When Fixed-Weighted Measures Are Not Appropriate.

To understand why the alternative measures are useful, let us look at some of the problems with fixed-weighted indexes. Shifting the base year of an output or price index to a more current period does improve the index's ability to measure recent economic growth or inflation rates. However, such a shift may reduce the index's accuracy in measuring changes in earlier periods. In our example it is better to use real GDP with year 6 as the base to measure the change in output between years 5 and 6 and probably to measure the change between years 4 and 5. However, it is better to use real GDP with year 1 as the base to measure the change in output between years 1 and 2, and probably to measure the change between years 2 and 3. Neither index may be preferred for measuring the change between years 3 and 4. Further, fixed-weighted indexes may not meet the needs of other kinds of analysis. For example, it is not clear which real GDP measure we should use to determine the change in output for the entire period between years 1 and 6. Or which real GDP measure we should use to compare the change in output in year 2 with that in year 5.

One method for estimating the changes in output between years 1 and 6 that does take into account the differences in relative prices in years 1 and 6 is to use the geometric mean of two fixed-weighted output indexes, one with year 1 as the base and the other with year 6 as the base. (A geometric mean is the square root of the product of two numbers). This process gives us a fixed-weighted index that "averages" the indexes that use relative prices for years 1 and 6 to value output. This index provides a reasonable measure of changes in output for the years between 1 and 6, but it may not be a good measure of changes for the years before year 1 and for the years after year 6. For instance, if our example extended to year 11, relative prices in that year might well be different than those in either year 1 or year 6. To extend the index so that it provides relevant changes in output for years 7 through 11, we can use the geometric mean of two fixed-weighted output indexes, one with year 6 as the base and the other with year 11 as the base. This process may be repeated at regular intervals, say every five years.

How are base years selected? A primary consideration in selecting a base year is the quality of the data available. Therefore, years when an economic census has been conducted and when BEA has undertaken a comprehensive (benchmark) revision to the national economic accounts usually serve as base years because they are the years in which the most detailed data are available. (Benchmark revisions, which occur about every five years, are key elements in BEA's ongoing program for improving the national economic accounts.)

The index described above that chains together "averages" of fixed-weighted indexes that use relative prices for adjacent base (or benchmark) years is known as the "benchmark-years-weighted" index. If we step outside our example briefly and look at the GDP estimates BEA publishes, we find that a benchmark-years-weighted index for the years between 1982 and 1987 would be computed by calculating the geometric mean for the old 1982-based output measure and the rebased 1987 measure. The advantages of such an index are that the relative prices on which output is being valued are based on the most comprehensive data available, and useful long-term analysis of changes in output may be made even if relative prices change significantly over time. The disadvantage of such an index is that the formula used to calculate its values are more complex than that for the fixed-weighted index.

While a benchmark-years-weighted index may be useful in measuring changes in output over a long time period and over the entire period between benchmark years, it may not be the best index to measure changes in output between any two consecutive years. For instance, in our example, the benchmark-years-weighted index uses relative prices for years 1 and 6. These relative prices may not be relevant for measuring the change in output between years 1 and 2. We may measure the change in output between these two years by using the geometric mean of changes in two fixed-weighted output indexes, one with year 1 as the base and the other with year 2 as the base. This produces a change in output valued by relative prices existing in years 1 and 2. A change in output between years 2 and 3 valued in the relative prices of those two years may be produced, and so on. When these changes are chained together the resulting index is known as a Fisher Ideal chain-type annual-weighted index. The advantage of this index is that for any two-year comparison the change in output is valued in relevant relative prices. The disadvantage of this index, as with the benchmark-years-weighted index, is that the formula used to calculate its values are more complex than that for the fixed-weighted index.

Changes in prices, as well as changes in output, may be measured using benchmark-years-weighted indexes and Fisher Ideal annual-weighted indexes. The advantages and disadvantages in measuring changes in prices with these indexes are similar to those for measuring changes in output. Because of their advantage for certain kinds of analysis, BEA will soon publish benchmark-years-weighted indexes and Fisher Ideal annual-weighted indexes for GDP and GDP prices.

Note: A more detailed explanation of the alternative output and price measures will appear in an upcoming issue of Survey of Current Business, BEA's monthly journal.

SERVICES ECONOMIC HIGHLIGHTS

CSI

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The Service Economy At a Glance—Still Adjusting

- ***Service Gross Domestic Product (GDP) Measured by Expenditures*** increased at a tiny 0.7% annual rate in the fourth quarter, down from 1.8% in the third. Economic activity in the goods-producing sector slowed to a standstill, just 0.1%, down from 2.2% in the third quarter. Excluding construction, however, the goods component of GDP declined 0.8% in the fourth quarter. Overall GDP increased 0.4% down from 1.8% in the third.

- ***Personal Consumption on Service Outlays*** increased in the fourth quarter at a 3.7% annual rate, up from 2.2% in the third quarter. Personal consumption of goods declined 4.4% in the fourth quarter, following a 2.6% increase in the third quarter. Monthly data for the first two months of the year show that personal consumption on services was still strong. Demand for services by consumers, thus, remains high.

- ***Private Service Exports*** were unchanged in the fourth quarter from the third, contributing to the soft service economy. Services exports generally have been growing nicely. A $1 billion increase in services imports reduced the services trade surplus to $10.6 billion from $11.6 billion in the third quarter. For the year, the surplus in services trade was a record $43 billion.

- ***The Service Sector Leading Index***—which leads activity by about six months—showed a 6.1% increase in February—the largest rise in nine years. The coincident index, reflecting current economic conditions, showed a 2.7% increase in February, following a 3% rise during January.

- ***Service Employment*** showed gains in March and February up 17,000 and 123,000, respectively. Notable increases were reported in the finance and retail trade areas, with continued weakness in wholesale trade.

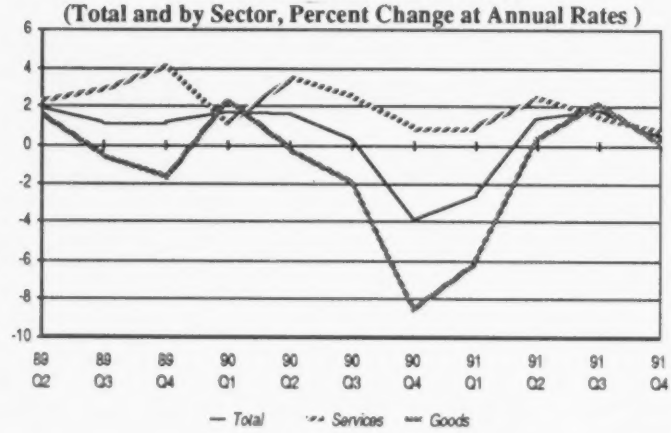
- ***Consumer Service Inflation*** continues to soften, with prices in March up 4.1% year-over-year. The corresponding figure a year earlier was 5.8%. Inflation in the goods sector picked up to a 2.2% year-over-year rate in March, from 1.7% in February. Service price inflation has moderated, helping consumer purchasing power and setting the stage for economic recovery.

- ***The Service Stock Price Index*** increased 6.7% in January and stayed essentially unchanged in February, standing 14.6% over last year's level.

Bottom Line: The service economy continues to work its way through a period of squeeze, relative weakness and adjustment. Consumer spending on those services which are necessities remains solid, but modest outlays for other services are slowing the recovery, and job growth in most service sectors is weak. A steady decline in service inflation has helped to prop up consumer spending, and the large 6.1% increase in the leading economic index for the service sector is reassuring. However, a steady stream of economic indicators providing evidence of an increasingly stronger service economy remains to be seen.

The service economy refers to the total economy, in which services activities are the dominant factor. The service economy comprises 68% of real production GNP and 77% of employment. Major segments are: Communications; Transportation; Public Utilities; Finance, Insurance and Real Estate; Wholesale and Retail Trade; Government; and "Service," a diverse category including Business Services, Personal Services, Professional and Health Services.

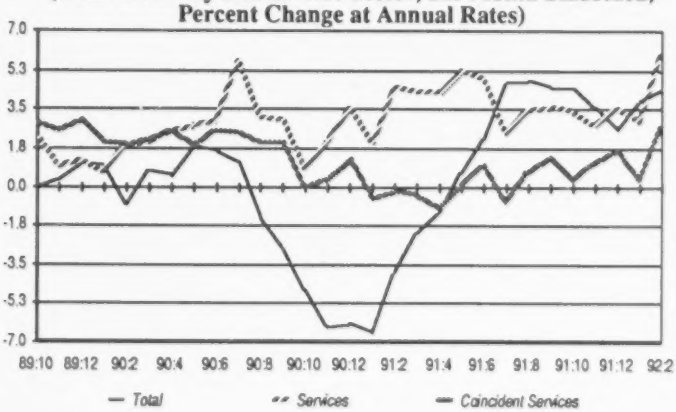
Chart 1
Real Gross Domestic Product
(Total and by Sector, Percent Change at Annual Rates)



Service GDP Growth Weakens

Fourth-quarter service GDP—measured on the expenditure basis—increased 0.7%, at an annual rate, down from 1.5% and 2.5% in the previous two quarters. The goods component of GDP, including construction, increased only 0.1%, following a 2.2% rise in the third quarter. For 1991, service GDP increased 1.6%, down from 2.6% in 1990. Goods GDP, including construction, declined 3.1%, more than accounting for the 0.7% decline in overall GDP. Current services activity thus is weak and recession-like for the service economy.

Chart 2
Leading Economic Indicator Indices
(Total Economy and Service Sector, Six-Month Smoothed, Percent Change at Annual Rates)

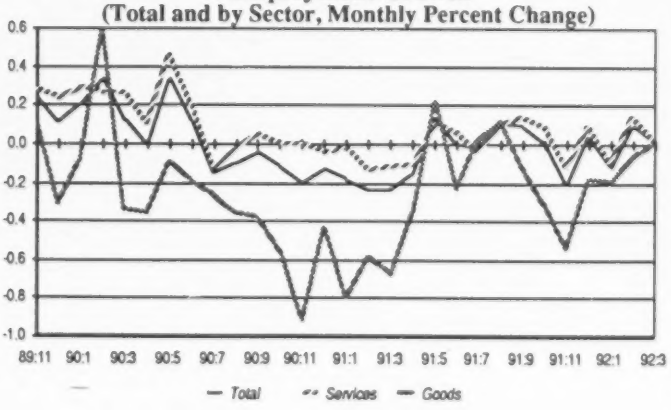


Service Leading Index Surges to a Nine-Year High

The leading index for the service sector increased 6.1% in February, following increases of 3% and 3.6% in the previous two months. Growth in the coincident index was up to 2.7% in February from 0.3% in January. The leading economic index for the overall economy increased 4.4% in February, up from 3.8% in January and 2.6% in December. These are all positive signs of a coming recovery.

The Services Sector Indices are produced by the Center for International Business Cycle Research, Columbia University.

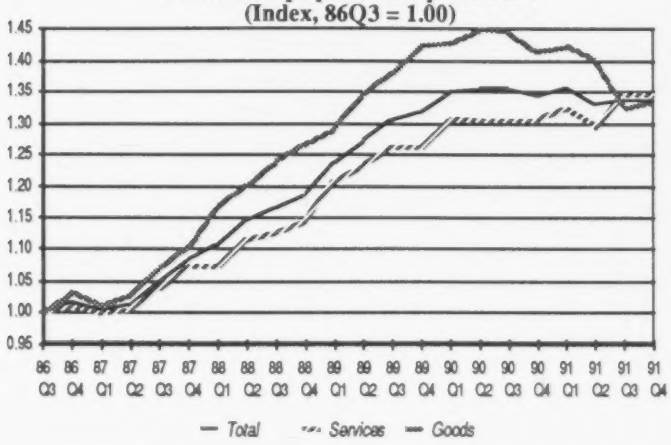
Chart 3
Employment Growth
(Total and by Sector, Monthly Percent Change)



Service Employment Soft

Service sector employment showed uneven gains in recent months, up 123,000 in February, but a smaller 17,000 increase in March. Compared to March 1991, however, the latest service employment figures were up by 369,000—reversing year-over-year declines seen in the last half of 1991. Employment in the goods sector continues its downward trend, down 14,000 over the two-month period ending in March and 385,000 lower than its level in March 1991.

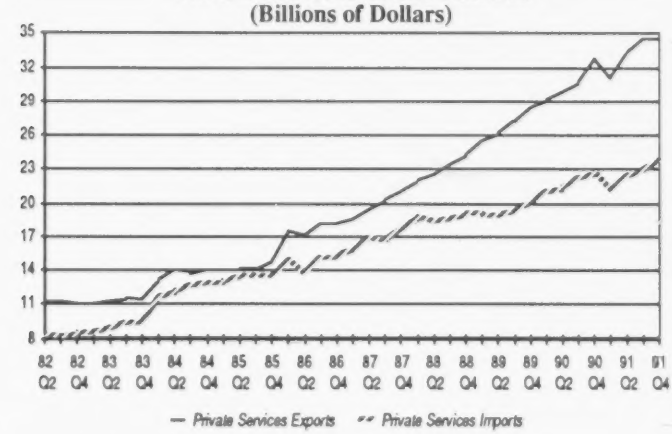
Chart 4
Plant & Equipment Expenditure
(Index, 86Q3 = 1.00)



Service Industry Spending on Plant & Equipment Marginally Higher

Current dollar spending on plant and equipment (P&E) by service industries increased 2.9% in the fourth quarter over its level a year earlier, a modest increase. Plant and equipment spending by goods-producing industries, however, declined 5.5% in the fourth quarter—the fifth consecutive year-over-year decline. For the year, service industries increased spending on P&E by only 1.6%. Goods-producing industries reduced P&E spending by 4.4%. A soft economy cannot be expected to induce businesses to spend much on new P&E.

Chart 5
Private Services Trade Balance
(Billions of Dollars)

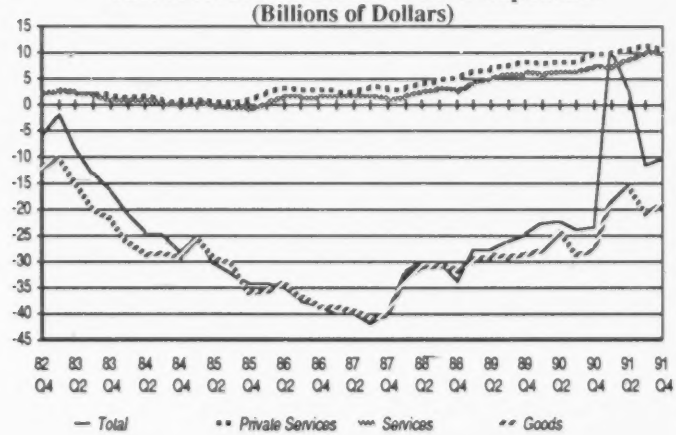


Private Services Trade Surplus Down from Record High*

The surplus in private services trade declined to $10.6 billion in the fourth quarter from $11.6 billion in the third, the result of flat exports and higher imports. For the complete year, the private services trade surplus was $43 billion, up sharply from $35.1 billion in 1990 and a record high. Exports of private services have been one of the brightest spots in a difficult economy.

* *Private services trade refers to private nonfinancial trade flows such as travel, tourism, education, passenger fares, financial services, and fees and royalties.*

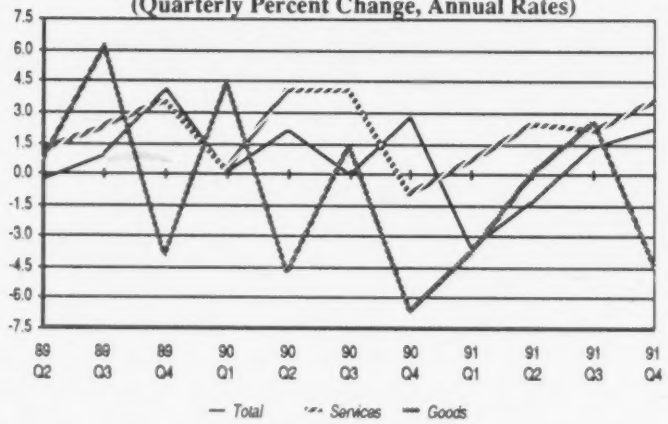
Chart 6
Current Account Balance and Components
(Billions of Dollars)



Current Account Balance Shows Small Deterioration

The current account balance was in deficit by $10.3 billion in the fourth quarter, improved from an $11.6 billion deficit in the third. For 1991, the U.S. posted a small $8.6 billion deficit, compared to $92.1 billion in 1990—the result of current account surpluses in the first two quarters. This big swing resulted from the combination of an improved goods and services trade balance, and large transfer receipts in the first two quarters of the year due to the Gulf War.

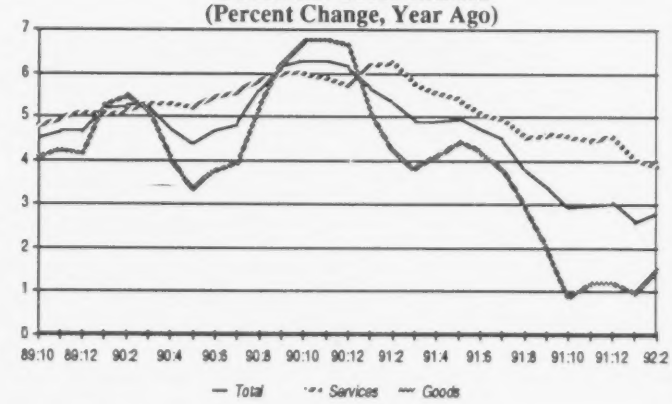
Chart 7
Real Personal Consumption Expenditures
(Quarterly Percent Change, Annual Rates)



Consumer Spending on Services Higher

Personal consumption expenditures on services increased at an inflation-adjusted 3.7% in the third quarter, up from annual rates of 2.2% and 2.5% in the previous two quarters. Spending on goods declined 4.4% in the fourth quarter mainly as a result of lower automobile purchases. For 1991, spending on services increased 1.7%, while that on goods declined 2.3%. The slowdown is a major reason for the squeeze on services and adjustments to a slower pace of activity.

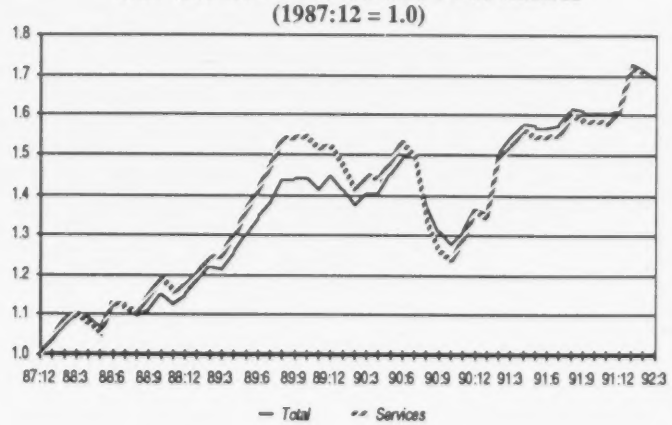
Chart 8
Consumer Price Indices
(Percent Change, Year Ago)



Service Inflation Improving

Over the twelve months ending in March, service inflation was reported at 4.1%, up from 3.8% in February, but continuing a downward trend from a high of 6.3% in February 1991. The long-term decline in price increases was mainly the result of stable rents and lower household utility bills. In March, goods inflation stood at 2.2%, down from 3.8% a year earlier, but up from 1.7% in February and 1% in January. Better service inflation can help to sustain a recovery in the service economy.

Chart 9
S&P 500 and Service Stock Price Indices
(1987:12 = 1.0)



Service Stock Prices Pick Up

The service stock price index was essentially flat in February, following a 6.7% increase in January. The S&P 500 stock price index was marginally down in February and March, following gains in February. Compared to their levels in February 1991, however, the S&P index was up 14%, while the service stock prices index was up 14.6%.

The Service Stock Price Index is based on S&P indices for 13 service industries and is compiled by the Center for International Business Cycle Research.

GOODS AND SERVICES TRADE—NOT JUST GOODS!

by Allen Sinai and Zaharo Sofianou

In discussions of trade and the U.S. economy, the statistic most commonly referred to is "the merchandise trade balance". It is this figure which is featured prominently in trade policy analysis in most major newspapers, and which frequently prompts a reaction by observers of the financial markets. The headlines are somewhat misleading, however, as merchandise exports and imports are only a part of total U.S. foreign trade.

The often overlooked component of the U.S. economy is that of services—or "things that you can buy or sell but cannot drop on your foot", as they were aptly described by the *Economist*. And, while services make up a smaller portion of total trade than goods, trade in services is disproportionately important to the U.S. economy as a result of its large trade surplus, which amounted to $43 billion in 1991, compared to a $73.6 billion deficit for goods trade.

While measurement of U.S. service sector activity is generally inferior when compared to measurement of goods, in the area of foreign trade inadequate coverage of services is particularly pronounced. In addition, the government's presentation of foreign trade statistics often leads to confusion. The inadequacies date to the end of the Second World War, when the system for measuring trade flows was being revised and internationalized by the International Monetary Fund. At that time, trade in services was quite limited, with the exception perhaps of shipping and other types of transportation necessary to carry merchandise from country to country.

Table 1
Goods and Services Trade Balance

	1986	1987	1988	1989	1990	1991	% Change From 1986
Total Goods and Services Trade Balance	-134.4	-148.4	-109.8	-86.3	-73.0	-30.6	-77.2
Goods Balance	-145.1	-159.5	-127.0	-115.9	-108.1	-73.6	-49.3
Services Balance	10.7	11.1	17.2	29.7	35.1	43.0	301.7
Total Goods and Services Exports	364.6	409.1	504.9	575.7	635.0	683.7	87.5
Percent Change		12.2	23.4	14.0	10.3	7.7	
Goods Exports	294.0	329.7	412.6	468.6	512.3	550.1	87.1
Percent Change		12.2	25.2	13.6	9.3	7.4	
Services Exports	70.6	79.4	92.3	107.1	122.7	133.6	89.2
Percent Change		12.5	16.2	16.0	14.6	8.9	
Total Goods and Services Imports	428.3	478.1	522.5	554.8	585.2	580.7	35.6
Percent Change		11.6	9.3	6.2	5.5	-0.8	
Goods Imports	368.4	409.8	447.3	477.4	497.7	490.1	33.0
Percent Change		11.2	9.2	6.7	4.3	-1.5	
Services Imports	59.9	68.3	75.1	77.4	87.6	90.6	51.3
Percent Change		14.1	10.0	3.1	13.1	3.5	

Allen Sinai is Chief Economist and Zaharo Sofianou, Senior Economist, of The Boston Company Economic Advisors, Inc.

As a result, a comprehensive system for measuring services exports and imports was not established, either by individual countries or by the International Monetary Fund. While the system for measuring trade in goods received worldwide attention, trade in services was neglected. Instead, services exports and imports were included in the more comprehensive "balance of payments" report, which measures total international transactions, including capital flows. Most countries, including the United States, still report trade in goods separately, while trade in services is reported as part of the "current account" of the balance of payments.

The emphasis placed on goods trade is further highlighted by the fact that in the United States the government publishes the balance of payments figures that include services quarterly, while trade reports on goods are provided monthly. Other countries such as the United Kingdom, Japan, and Germany provide monthly balance of payments figures, so that the reporting gap between goods and services trade is not as wide as it is in this country. This large difference in the reporting frequency, and in turn the downplaying of trade in services, is unfortunate since the United States is the largest exporter of services and is also the country with the largest surplus in services trade. In fact, if merchandise trade was reported quarterly together with services trade, it would be obvious that the overall U.S. trade deficit is not as alarming as it appears from statistics on goods alone. Those who observe only the monthly goods trade figures are actually being misled.

More Limits to Services Data

This short study includes exports and imports of goods and services between the U.S. and a number of our trading partners. The data prepared are annual, going back to 1986. Bilateral trade balances were computed in this way because service data for all countries except Japan, Canada, the United Kingdom, and Australia are only available annually, with a nine-month delay, and prior to 1986 the data are unreliable due to incomplete measurement. Moreover, the U.S. government does not publish services trade data for any of the smaller countries in Asia or Africa, even though as a group they have contributed a services surplus of $14.4 billion to the overall U.S trade balance. As a result, we were able to compute goods and services trade balances through 1990 for all of the countries in our sample, but for 1991 total goods and services trade balances were available for the major trading regions or countries, (i.e., Canada, Japan, Europe and Western Hemisphere) but not for each individual European country (Tables 2 and 4).

Goods and Services Trade

In computing goods and services trade balances we used exports and imports of goods, as reported in the balance of payments report, and exports and imports of "private services", rather than total services, which include government transactions. Moreover, income and payments on foreign direct investment and portfolio investment, which previously were included as "services" by the Bureau of Economic Analysis, are now rightly excluded from the service category, both by BEA and in the trade figures computed in this report.

Table 1 shows U.S. exports and imports of goods and services and the balances in each area. In every year from 1986 on, the surplus in services trade has grown steadily, from $10.7 billion in 1986 to $43 billion in 1991. The growth in services exports over the same period has been 89.2%

(Table 1), or nearly double. The factors that have contributed to this large increase include better methods of measuring services exports, as well as a high rate of growth for world trade in services. And, while the contribution of the services trade surplus was small relative to the size of the trade deficit in earlier years, by 1991 the services trade surplus, at $43 billion, helped produce a goods and services trade deficit of $30.6 billion—a rather small deficit for a country where GDP that year was $5672.6 billion.

As in the case of total trade, the goods and services trade balances for each individual country or region differ greatly from the goods balances alone.

Table 4 shows that the United States had an impressive $30.1 billion goods and services trade surplus with European countries in 1991, up from $14.1 billion in 1990 and a deficit of $27.7 billion in 1986. Using merchandise trade data only (Table 3), the surplus in 1991 is underestimated by more than $10 billion. Moreover, U.S.-Canadian trade was almost in balance in 1991, compared to a U.S. goods deficit of $8 billion. And, while the overall U.S. trade deficit with Japan is still large at $32.5 billion, the deficit is reduced by $11.6 billion due to a surplus in services trade. Compared to 1986, the U.S. merchandise trade deficit with Japan declined only about $10 billion, while the goods and services trade deficit declined $17.5 billion. Similarly, the U.S. goods trade deficit with other countries in Asia and Africa—(a group that includes Korea, Singapore, Taiwan, and Hong Kong, but for which services trade figures are not available on an individual country basis)—stood at $44.2 billion in 1991, down from over $55 billion in 1990. Nevertheless, a large jump in the U.S. services trade surplus against this group of countries reduced the total deficit by $13 billion from $49.1 billion in 1990 to $36.1 billion in 1991.

Conclusion

This brief study, uses government data to compute goods and services exports, imports and balances between the U.S. and a number of countries and regions. Data on goods trade are easily available, released on a monthly basis, and cover exports and imports of the smallest item to and from the smallest country. Services exports and imports, however, receive less attention and are released as a part of the balance of payments report, on a quarterly basis, and with disaggregated data for fewer countries. Indeed, the quarterly report only contains bilateral services trade with Japan, Canada, the United Kingdom and Australia; transactions with other countries are combined into larger geographic regions. Bilateral exports and imports of services with a slightly larger sample of U.S. trading partners are available on an annual basis, and are released with a nine-month lag.

This study makes it clear that international trade in services should not be treated like a second-class economic statistic. Its large $43 billion surplus in 1991 was more than half the $73.6 billion deficit in the goods balance, helping to reduce the overall goods and services trade balance to $30.6 billion. Since exports and imports of services are such a significant part of U.S. trade, we propose the government publish a quarterly statistical report that includes the goods and services trade figures, along with the quarterly balance of payments release, to report the entire U.S. international transactions for the quarter. This type of format would present a more accurate picture of U.S. trade, and assist users of economic statistics and policymakers alike.

Table 2
Total Private Services Trade

	Exports						Imports					
	1986	1987	1988	1989	1990	1991	1986	1987	1988	1989	1990	1991
All Countries	70.6	79.4	92.3	107.1	122.7	133.6	59.9	68.3	75.1	77.4	87.6	90.6
Canada	7.7	8.8	9.5	11.2	13.1	14.8	4.6	5.1	6.5	6.1	6.5	6.5
Japan	9.8	11.7	14.1	17.6	19.0	20.6	5.6	6.3	7.1	7.2	8.4	9.0
Europe	22.6	27.0	32.1	38.1	44.0	46.6	21.8	25.2	27.4	28.5	34.1	34.5
Western Europe	22.3	26.7	31.7	36.7	43.0	45.8	21.5	24.4	26.8	28.0	33.3	33.6
European Communities (12)	18.6	22.5	26.2	30.6	35.4	38.0	18.3	20.8	22.7	23.9	28.0	28.5
Belgium-Luxembourg	0.9	0.9	1.1	1.3	1.6	NA	0.5	0.5	0.9	0.7	0.7	NA
France	2.4	3.0	3.3	4.1	4.7	NA	1.7	2.0	2.3	2.9	3.4	NA
Germany, FDR	3.6	4.5	5.1	5.4	6.5	NA	3.6	4.5	4.9	4.8	5.7	NA
Italy	1.8	2.1	2.4	2.6	3.2	NA	2.1	2.4	2.7	2.6	3.1	NA
Netherlands	1.7	1.9	2.2	2.7	3.2	NA	0.9	1.2	1.2	1.3	1.6	NA
United Kingdom	5.7	7.3	8.6	10.9	11.6	11.0	6.8	8.0	6.9	8.2	10.5	9.8
Other	2.5	2.8	3.5	3.7	4.6	NA	2.6	2.3	3.8	3.4	3.0	NA
Other Western Europe	3.7	4.2	5.5	6.1	7.7	7.8	3.2	3.6	4.1	4.1	5.3	5.1
Eastern Europe	0.3	0.4	0.4	0.6	0.9	1.0	0.3	0.5	0.5	0.5	0.8	0.9
Latin America & Other Western Hemisphere	13.0	13.2	14.8	16.6	18.8	21.1	14.2	16.0	17.0	18.3	19.7	21.1
Mexico	3.4	6.1	4.1	4.2	6.2	NA	4.3	5.0	5.7	8.0	7.0	NA
Venezuela	1.5	0.8	0.9	1.0	1.3	NA	0.5	0.5	0.6	0.5	0.6	NA
Other	8.0	6.2	9.8	11.3	11.4	NA	9.4	10.5	10.7	9.8	12.1	NA
Other Countries in Asia & Africa	12.9	13.4	15.9	17.7	20.8	23.0	10.6	12.6	13.0	13.7	14.4	14.9
Australia	1.6	1.8	2.2	2.7	3.1	3.3	1.1	1.5	1.6	1.6	2.1	2.2

	Balance					
	1986	1987	1988	1989	1990	1991
All Countries	10.7	11.1	17.2	29.7	35.1	43.0
Canada	3.1	3.6	3.1	5.1	6.5	8.2
Japan	4.1	5.4	7.0	10.4	10.6	11.6
Europe	0.8	1.9	4.6	9.6	9.9	12.1
Western Europe	0.8	2.3	4.9	8.8	9.8	12.2
European Communities (12)	0.3	1.6	3.6	6.7	7.4	9.4
Belgium-Luxembourg	0.4	0.4	0.2	0.7	0.9	NA
France	0.7	1.0	1.0	1.2	1.3	NA
Germany, FDR	0.0	0.0	0.3	0.6	0.8	NA
Italy	-0.3	-0.3	-0.3	-0.1	0.1	NA
Netherlands	0.8	0.7	1.1	1.3	1.6	NA
United Kingdom	-1.2	-0.7	1.7	2.7	1.0	1.2
Other	-0.7	0.5	-0.3	0.3	1.6	NA
Other Western Europe	3.3	0.7	1.4	2.1	2.4	2.7
Eastern Europe	0.0	-0.1	-0.1	0.1	0.2	0.1
Latin America & Other Western Hemisphere	-1.2	-2.9	-2.2	-1.7	-0.9	0.0
Mexico	-0.9	1.2	-1.6	-3.8	-0.8	NA
Venezuela	1.0	0.3	0.3	0.5	0.7	NA
Other	-1.3	-4.3	-0.9	1.5	-0.7	NA
Other Countries in Asia & Africa	2.3	0.8	2.9	3.9	6.4	8.1
Australia	0.5	0.3	0.7	1.0	1.1	1.1

Sources: The Boston Company Economic Advisors, Inc. and Bureau of Economic Analysis.

Table 3
Total Merchandise Trade

	Exports						Imports					
	1986	1987	1988	1989	1990	1991	1986	1987	1988	1989	1990	1991
All Countries	223.4	250.3	320.3	361.5	389.6	416.5	368.4	409.8	447.3	477.4	497.7	490.1
Canada	56.5	62.0	74.3	80.7	83.6	85.1	69.7	73.6	84.7	89.9	93.0	93.1
Japan	26.4	27.6	37.2	43.9	48.0	47.5	80.8	84.6	89.8	93.5	89.7	91.6
Europe	62.4	70.9	90.2	103.9	115.7	121.7	90.9	98.0	104.8	104.5	111.5	103.9
Western Europe	60.4	68.6	86.4	98.4	111.4	116.8	89.0	96.1	102.6	102.4	109.3	102.1
European Communities (12)	51.8	59.5	74.5	84.5	96.3	101.4	74.2	81.5	86.0	85.5	91.3	86.0
Belgium-Luxembourg	5.5	6.1	7.4	8.4	10.4	10.7	3.9	4.2	4.5	4.5	4.6	4.1
France	7.1	7.9	9.9	11.6	13.7	15.4	9.5	10.5	12.5	12.9	13.1	13.2
Germany, FDR	10.5	11.5	14.3	16.4	18.3	20.8	24.5	26.9	26.3	24.7	28.0	26.1
Italy	4.8	5.5	6.7	7.1	7.8	8.5	10.3	10.9	11.5	11.9	12.7	11.7
Netherlands	7.2	8.0	9.7	11.3	12.8	13.3	4.1	4.8	6.0	4.9	4.9	4.9
United Kingdom	11.2	13.8	18.1	20.3	22.9	21.5	15.1	17.2	17.7	18.0	19.9	18.4
Other	5.7	6.7	8.5	9.4	10.4	11.3	6.7	6.8	7.6	8.6	8.2	7.6
Other Western Europe	8.5	9.1	11.9	13.9	15.1	15.5	14.8	14.7	16.6	16.9	17.9	16.1
Eastern Europe	2.1	2.3	3.8	5.5	4.3	4.9	2.0	1.9	2.2	2.1	2.3	1.8
Latin America & Other Western Hemisphere	30.8	35.0	43.7	48.8	54.3	63.3	42.0	47.3	51.4	57.5	64.3	63.0
Mexico	12.3	14.6	20.6	24.7	28.1	33.1	17.7	20.3	23.3	27.1	30.5	31.5
Venezuela	3.1	3.5	4.5	3.0	3.1	4.6	4.8	5.7	5.2	6.8	9.5	8.2
Other	15.4	16.8	18.5	21.2	23.1	25.6	19.5	21.4	23.0	23.6	24.3	23.3
Other Countries in Asia & Africa	42.2	49.5	68.1	75.9	79.2	90.3	82.4	103.3	113.0	128.1	134.7	134.5
Australia	5.1	5.3	6.8	8.1	8.3	8.3	2.6	3.0	3.5	3.9	4.4	4.0

	Balance					
	1986	1987	1988	1989	1990	1991
All Countries	-145.1	-159.5	-127.0	-115.9	-108.1	-73.6
Canada	-13.2	-11.6	-10.4	-9.3	-9.5	-8.0
Japan	-54.4	-57.0	-52.6	-49.7	-41.7	-44.1
Europe	-28.5	-27.2	-14.5	-0.5	4.2	17.8
Western Europe	-28.6	-27.5	-16.2	-4.0	2.1	14.7
European Communities (12)	-22.3	-21.9	-11.6	-1.0	5.0	15.4
Belgium-Luxembourg	1.5	1.9	2.9	3.9	5.8	6.6
France	-2.4	-2.6	-2.6	-1.3	0.6	2.1
Germany, FDR	-14.1	-15.4	-12.1	-8.3	-9.7	-5.3
Italy	-5.6	-5.5	-4.8	-4.8	-4.8	-3.2
Netherlands	3.1	3.2	3.8	6.3	7.8	8.4
United Kingdom	-3.9	-3.5	0.4	2.4	3.0	3.2
Other	-0.9	-0.2	0.9	0.8	2.2	3.7
Other Western Europe	-6.3	-5.6	-4.6	-3.0	-2.8	-0.7
Eastern Europe	0.1	0.3	1.7	3.5	2.1	3.1
Latin America & Other Western Hemisphere	-11.3	-12.3	-7.8	-8.7	-10.0	0.3
Mexico	-5.4	-5.7	-2.7	-2.4	-2.4	1.6
Venezuela	-1.7	-2.1	-0.6	-3.8	-6.4	-3.6
Other	-4.2	-4.5	-4.4	-2.4	-1.2	2.3
Other Countries in Asia & Africa	-40.2	-53.8	-45.0	-52.2	-55.6	-44.2
Australia	2.5	2.3	3.3	4.2	3.9	4.3

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Table 4
Total Merchandise and Private Services Trade

	Exports						Imports					
	1986	1987	1988	1989	1990	1991	1986	1987	1988	1989	1990	1991
All Countries	294.0	329.7	412.6	468.6	512.3	550.1	428.3	478.1	522.5	554.8	585.2	580.7
Canada	64.2	70.8	83.8	91.9	96.6	99.9	74.3	78.7	91.2	96.1	99.5	99.6
Japan	36.1	39.3	51.2	61.4	67.0	68.1	86.4	90.9	96.9	100.7	98.1	100.6
Europe	85.1	97.9	122.3	142.0	159.7	168.5	112.8	123.2	132.2	133.0	145.6	138.4
Western Europe	82.6	95.3	118.1	135.1	154.4	162.2	110.4	120.5	129.4	130.3	142.5	135.7
European Communities (12)	70.5	82.0	100.7	115.2	131.6	139.4	92.4	102.3	108.7	109.4	119.3	114.5
Belgium-Luxembourg	6.4	7.1	8.5	9.8	12.0	NA	4.5	4.7	5.4	5.2	5.3	NA
France	9.5	10.9	13.2	15.7	18.4	NA	11.3	12.5	14.8	15.8	16.4	NA
Germany, FDR	14.0	16.1	19.4	21.8	24.8	NA	28.1	31.5	31.2	29.5	33.7	NA
Italy	6.6	7.6	9.0	9.7	11.0	NA	12.5	13.3	14.2	14.5	15.8	NA
Netherlands	8.9	10.0	11.9	13.9	16.0	NA	5.0	6.0	7.1	6.3	6.5	NA
United Kingdom	16.8	21.0	26.6	31.3	34.5	32.5	21.9	25.2	24.6	26.1	30.5	28.2
Other	8.2	9.4	12.0	13.1	15.0	NA	9.2	9.1	11.4	12.0	11.2	NA
Other Western Europe	12.2	13.3	17.4	20.0	22.8	23.2	18.0	18.2	20.7	20.9	23.2	21.2
Eastern Europe	2.4	2.6	4.3	6.1	5.3	5.9	2.3	2.4	2.7	2.6	3.1	2.7
Latin America & Other Western Hemisphere	43.7	48.1	58.4	65.4	73.1	84.4	56.2	63.3	68.4	75.8	84.0	84.1
Mexico	15.7	20.7	24.7	28.9	34.3	NA	22.0	25.3	29.0	35.1	37.5	NA
Venezuela	4.6	4.4	5.4	4.0	4.3	NA	5.3	6.2	5.8	7.2	10.1	NA
Other	23.4	23.1	28.3	32.5	34.5	NA	28.9	31.9	33.7	33.5	36.5	NA
Other Countries in Asia & Africa	55.2	63.0	84.0	93.5	100.0	113.3	93.0	115.9	126.1	141.8	149.1	149.4
Australia	6.6	7.1	9.1	10.8	11.4	11.6	3.7	4.4	5.1	5.5	6.5	6.2

	Balance					
	1986	1987	1988	1989	1990	1991
All Countries	-134.4	-148.4	-109.8	-86.3	-73.0	-30.6
Canada	-10.1	-8.0	-7.4	-4.2	-2.9	0.3
Japan	-50.3	-51.6	-45.6	-39.3	-31.1	-32.5
Europe	-27.7	-25.3	-9.9	9.0	14.1	30.1
Western Europe	-27.8	-25.2	-11.3	4.8	11.9	26.9
European Communities (12)	-22.0	-20.3	-8.0	5.7	12.3	24.9
Belgium-Luxembourg	1.9	2.3	3.1	4.6	6.7	NA
France	-1.8	-1.6	-1.6	-0.1	2.0	NA
Germany, FDR	-14.0	-15.4	-11.8	-7.7	-8.9	NA
Italy	-5.9	-5.7	-5.2	-4.9	-4.8	NA
Netherlands	3.9	4.0	4.8	7.6	9.5	NA
United Kingdom	-5.1	-4.2	2.1	5.1	4.0	4.3
Other	-1.0	0.3	0.6	1.1	3.8	NA
Other Western Europe	-5.8	-4.9	-3.3	-0.9	-0.4	2.0
Eastern Europe	0.1	0.2	1.6	3.6	2.2	3.2
Latin America & Other Western Hemisphere	-12.5	-15.2	-10.0	-10.4	-11.0	0.4
Mexico	-6.3	-4.5	-4.3	-6.2	-3.2	NA
Venezuela	-0.7	-1.8	-0.3	-3.3	-5.8	NA
Other	-5.5	-8.8	-5.7	-0.9	-2.0	NA
Other Countries in Asia & Africa	-37.9	-53.0	-42.1	-48.3	-49.1	-36.1
Australia	3.0	2.7	3.9	5.3	4.9	5.4

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THE COALITION OF SERVICE INDUSTRIES was formed in 1982 to increase public awareness of the expanding role of the service sector in the U.S. economy. One of the priorities of the Coalition is to improve the adequacy of statistical programs in their measurement and analysis of the service sector.

THE SERVICE ECONOMY is a product of the CSI Task Force on Data Collection and Statistical Improvement. Comments or suggestions should be directed to Maria Eli of CSI at 202/508-8624.

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Table 1
Summary of the Service Economy
(Monthly Indicators)

	1991:10	1991:11	1991:12	1992:1	1992:2	1992:3	1987	1988	1989	1990	1991
Total Employment—											
Millions of Persons	109.1	108.8	108.9	108.8	108.9	108.9	102.2	105.5	108.3	110.0	109.0
Services	85.3	85.2	85.3	85.3	85.4	85.4	77.5	80.4	83.0	85.0	85.2
Goods	23.7	23.6	23.6	23.5	23.5	23.5	24.7	25.2	25.3	25.0	23.8
Total Wages and Salaries—											
Billions of Dollars	2830.2	2835.0	2852.7	2835.8	2871.9	NA	2261.2	2440.5	2585.8	2738.9	2808.3
Services	2082.7	2095.6	2107.5	2101.0	2133.9	NA	1609.4	1741.5	1862.0	1993.5	2069.6
Goods	747.5	739.4	745.2	734.8	738.0	NA	651.8	699.0	723.8	745.3	738.7
Total Compensation											
%Change, Year-Over-Year	2.3	2.3	2.0	2.3	3.8	NA	7.4	7.9	6.0	5.9	2.5
Services	3.2	3.2	2.8	3.3	4.9	NA	9.0	8.2	6.9	7.1	3.8
Goods	-0.1	-0.2	-0.1	-0.4	0.5	NA	3.7	7.2	3.5	3.0	-0.9
Consumer Price Index—All Urban,											
%Change, Year-Over-Year	2.9	3.0	3.1	2.6	2.8	3.2	3.7	4.1	4.8	5.4	4.2
Services	4.5	4.4	4.6	4.0	3.9	4.1	4.1	4.6	4.9	5.5	5.1
Goods	0.9	1.2	1.2	1.0	1.5	2.1	3.2	3.5	4.7	5.2	3.1
Services Leading Indicator Index (%)*	3.1	2.6	3.6	3.0	6.1	NA	6.2	1.6	2.9	1.7	4.5
Leading Economic Indicator Index—total (%)*	4.5	3.6	2.6	3.8	4.4	NA	5.8	1.6	1.8	-0.7	-0.3
Services Coincident Indicator Index (%)*	0.4	1.1	1.7	0.3	2.7	NA	3.6	3.8	2.7	2.0	0.3
Service Industries Stock Price Index	125.5	125.3	127.5	136.1	135.7	NA	95.6	88.3	111.5	110.7	122.3
S&P 500 Stock Price Index	386.9	385.9	388.5	416.1	412.6	407.4	286.8	265.8	322.8	334.6	376.2

* *Growth rate expressed in six-month smoothed percent changes at annual rate.*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Center for International Business Cycle Research and The Boston Company Economic Advisors, Inc.

Table 2
Summary of the Service Economy
(Percent Change, SAAR, Except Where Indicated)

	1990:3	1990:4	1991:1	1991:2	1991:3	1991:4	1987	1988	1989	1990	1991
Gross Domestic Product (87 Dollars)	0.2	-3.9	-2.5	1.4	1.8	0.4	3.1	3.9	2.5	1.0	-0.7
Services	2.5	0.9	0.9	2.5	1.5	0.7	3.8	3.6	2.3	2.6	1.6
Goods and Construction	-2.0	-8.5	-6.1	0.3	2.2	0.1	2.4	4.2	2.8	-0.6	-3.1
Construction	-5.6	-11.6	-21.0	-3.0	-5.4	4.9	-0.2	-0.4	-0.9	-2.1	-10.1
GNP—Product Measure (82 Dollars)	—	—	—	—	—	—	3.4	4.5	2.5	NA	NA
Services	—	—	—	—	—	—	3.0	4.3	3.2	NA	NA
Goods	—	—	—	—	—	—	4.3	4.7	1.1	NA	NA
Manufacturing	—	—	—	—	—	—	6.1	7.7	1.3	NA	NA
Agri./Mining/Construction	—	—	—	—	—	—	0.9	-1.4	0.6	NA	NA
Consumption Expenditures	2.8	-3.5	-1.3	1.4	2.3	0.0	2.8	3.6	1.9	1.2	-0.1
Services	4.1	-0.9	0.7	2.5	2.2	3.7	3.9	3.7	2.0	2.3	1.7
Goods	1.3	-6.6	-3.7	0.1	2.6	-4.4	1.6	3.5	1.8	0.0	-2.3
Plant and Equipment Expenditures— Current Dollars (Y/Y)	3.8	1.9	0.6	-1.9	-1.2	-0.2	2.5	11.0	11.4	5.3	-0.7
Services	3.3	3.4	1.1	-0.8	3.2	2.9	2.9	8.3	11.2	5.2	1.6
Goods	4.7	-0.6	-0.4	-3.6	-8.3	-5.5	1.7	15.7	11.6	5.5	-4.4
Corporate Profits—Current Dollars %Change (Y/Y)	-9.6	-10.1	-11.3	-9.8	1.9	9.0	20.2	15.9	0.7	-5.5	-3.2
Services	-4.2	-2.6	-2.2	-2.0	10.1	NA	8.2	4.7	3.8	1.7	NA
Goods	-16.9	-21.9	-26.5	-22.6	-11.3	NA	47.6	34.9	-3.3	-15.7	NA

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics and The Boston Company Economic Advisors, Inc.

Table 3
Summary of the Service Economy
(Billions of 1987 Dollars, SAAR, Except Where Indicated)

	1990:3	1990:4	1991:1	1991:2	1991:3	1991:4	1987	1988	1989	1990	1991
Gross Domestic Product (87 Dollars)	4903.3	4855.1	4824.0	4840.7	4862.7	4868.0	4540.0	4718.6	4836.9	4884.9	4848.8
Services	2476.3	2481.8	2487.4	2502.7	2511.8	2516.2	2267.3	2349.7	2402.8	2464.9	2504.5
Goods and Construction	2427.0	2373.4	2336.2	2338.1	2350.9	2351.7	2272.7	2368.9	2434.0	2420.0	2344.2
Construction	458.6	444.7	419.3	416.1	410.4	415.3	478.2	476.3	472.1	462.0	415.3
GNP—Product Measure (82 Dollars)	—	—	—	—	—	—	3845.3	4016.9	4117.7	NA	NA
Services	—	—	—	—	—	—	2583.0	2695.1	2782.0	NA	NA
Goods	—	—	—	—	—	—	1262.3	1321.8	1335.7	NA	NA
Manufacturing	—	—	—	—	—	—	852.2	917.4	929.0	NA	NA
Agri./Mining/Construction	—	—	—	—	—	—	410.1	404.4	406.7	NA	NA
Consumption Expenditures	3281.2	3251.8	3241.1	3252.4	3271.2	3271.1	3052.2	3162.4	3223.0	3262.6	3258.9
Services	1787.3	1783.1	1786.3	1797.2	1806.8	1823.1	1637.4	1698.5	1732.9	1772.9	1803.3
Goods	1493.9	1468.7	1454.8	1455.2	1464.4	1448.0	1414.8	1463.9	1490.1	1489.7	1455.6
Plant and Equipment Expenditures— Current Dollars	534.1	530.1	535.5	524.6	527.9	528.9	409.2	454.2	506.0	532.8	529.2
Services	330.1	330.3	334.5	327.1	340.7	340.0	260.4	282.2	313.9	330.2	335.6
Goods	204.0	199.8	201.0	197.4	187.1	188.9	148.8	172.1	192.1	202.6	193.6
Corporate Profits—Current Dollars	245.8	232.1	241.2	254.4	250.4	252.9	233.9	271.2	273.1	258.0	249.7
Services	151.1	153.2	166.2	171.5	166.3	NA	146.8	153.7	159.5	162.3	NA
Goods	94.8	78.9	75.0	82.9	84.1	NA	87.1	117.4	113.6	95.7	NA
Current Account Balance— Quarterly Rates	-23.9	-23.4	10.4	2.9	-11.6	-10.3	-160.2	-126.2	-106.3	-92.1	-8.6
Services Balance	6.4	7.5	7.1	9.0	10.2	9.6	6.3	10.3	22.4	26.4	35.9
Private Services Balance **	8.5	10.1	9.9	10.9	11.6	10.6	11.4	17.4	30.1	35.1	43.0
Exports	30.8	32.8	31.0	33.3	34.6	34.6	79.4	92.4	107.5	122.7	133.6
Imports	-22.3	-22.7	-21.2	-22.4	-23.0	-24.0	-68.0	-75.0	-77.4	-87.6	-90.6
Merchandise Trade Balance	-28.8	-27.7	-18.5	-15.5	-20.8	-18.7	-159.5	-127.0	-115.9	-108.1	-73.6

* *Private Services Balance is the balance on Service exports and imports excluding receipts and payments on investments and government transactions.*

Sources: Bureau of Economic Analysis and The Boston Company Economic Advisors, Inc.

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THE SERVICE ECONOMY

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Census to Expand Service Sector Data Initiates Survey of Communication Services Industries

Susan M. Keehan

Technological innovations and government policies promoting deregulation have had a profound effect on the service economy, often creating new industries that did not exist a few years ago. Changes are occurring in the types of services offered, the way they are delivered, and the prices we pay for them.

Government statistical programs have failed to keep pace with the growth and change in the service sector. In many instances these programs have actually declined as both regulatory and general purpose statistical requirements were eliminated.

Since 1983, the Census Bureau and other major federal producers of statistical data have undertaken programs to improve statistics on services. Last year the President approved a multi-year initiative, involving all major statistical agencies, to improve economic statistics in the areas of productivity, output and prices; investment, savings and national wealth; and employment, income, and poverty. This initiative builds on the data improvement efforts already underway at the statistical agencies and will implement quality improvement recommendations developed by a working group of the Economic Policy Council, chaired by Dr. Michael Boskin, Chairman of the Council of Economic Advisors.

Ms. Keehan is a Business Analyst with the Current Services Branch of the Bureau of the Census.

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The Census Bureau currently is developing plans to address the priorities identified by the working group, particularly in the area of improving service sector data. The Bureau is undertaking its largest program expansion in over 40 years by expanding coverage in the 1992 Quinquennial Economic Census to include 74 industries in communications, public utilities; finance, insurance, and real estate; and transportation industries not previously covered in the Census of Transportation. This expansion will increase economic census coverage from 88 to 98 percent of the nation's total employment.

During the last fiscal year, the Census Bureau received additional funding to begin implementing some of these recommendations. This funding was used to introduce a new Annual Survey of Communication Services.

Table 1. **Communication Services (SIC 48)—Summary Statistics, by Kind of Business: 1989 and 1990**

Item	Communication services (SIC 48)	Telephone services (SIC 4811)	Radio and television broadcasting (SIC 483)	Radio broadcasting (SIC 4832)	Television broadcasting (SIC 4833)	Cable television, telegraph, and other communication services (SIC 4821 + 4899)
Total Operating Revenue						
Millions of dollars						
1990	211,640	156,003	28,684	7,391	21,293	26,954
1989	202,820	150,935	27,882	7,341	20,540	24,004
Percent change						
1990/1989	4.4	3.4	2.9	0.7	3.7	12.3
Total Operating Expenses						
Millions of dollars						
1990	173,615	126,775	24,948	6,788	18,160	21,892
1989	166,421	123,131	23,810	6,688	17,122	19,480
Percent change						
1990/1989	4.3	3.0	4.8	1.5	6.1	12.4
Annual Payroll						
Millions of dollars						
1990	41,312	30,799	6,681	2,636	4,045	3,832
1989	39,212	29,205	6,478	2,577	3,901	3,529
Percent change						
1990/1989	5.4	5.5	3.1	2.3	3.7	8.6
Employer Contributions to Social Security and Other Supplemental Benefits						
Millions of dollars						
1990	9,101	7,303	1,056	361	696	742
1989	8,841	7,166	1,008	351	657	667
Percent change						
1990/1989	2.9	1.9	4.8	2.8	5.9	11.2

Table 1A. **Estimated Coefficients of Variation for SIC 48: 1989 and 1990**

SIC	Total operating revenue			Total operating expenses			Annual payroll			Employer contributions to Social Security and other supplemental benefits		
	1990	1989	1990/1989	1990	1989	1990/1989	1990	1989	1990/1989	1990	1989	1990/1989
48	1.5	1.3	0.3	1.5	1.4	0.2	1.3	1.1	0.4	0.8	0.6	0.2

The Annual Survey of Communication Services covers all employer firms with one establishment or more, primarily engaged in providing point-to-point communication services, whether by wire or radio, and whether intended to be received aurally or visually. This includes telephone communications, including cellular and other radio-telephone services, telegraph and other message communications, such as electronic mail services, facsimile transmission services, telex services, and so on; radio and television broadcasting stations and networks; cable and other pay television services; and other communication services, such as satellite earth stations.

The 1990 survey provided detailed estimates of operating revenue and expenses summarized by kind of business classification based on the 1972 edition of the Standard Industrial Classification Manual and the 1977 supplement, issued by the Office of Management and Budget.

Highlights from the 1990 survey follow:

Revenue for communication services totaled more than $211.6 billion in 1990, an increase of 4.4 percent compared to 1989. At the same time, operating expenses increased 4.3 percent to $173.6 billion. The largest year-to-year increase was in the cable television, telegraph, and other communication services area (Table 1).

Table 2. **Telephone Communications (SIC 4811)—Estimated Operating Revenue, Expenses, and Coefficients of Variation: 1989 and 1990**

Item	Millions of dollars		Percent change 1990/1989	Coefficients of variation		
				Dollar volume		Year-to-year ratio
	1990	1989		1990	1989	1990/1989
Operating Revenue						
Total	156,003	150,935	3.4	1.9	1.7	0.3
Local service	39,231	37,816	3.7	0.9	0.8	0.2
Long-distance service	68,128	66,165	3.0	4.0	3.6	0.7
Network access	29,189	28,971	0.8	0.7	0.7	0.1
Cellular and other radiotelephone	3,563	2,652	34.3	4.7	3.7	1.6
Directory advertising	8,187	7,683	6.6	0.8	1.2	0.5
Other operating revenue	7,705	7,647	0.8	2.5	2.3	0.4
Operating Expenses						
Total	126,775	123,131	3.0	2.0	1.8	0.2
Annual payroll	30,799	29,205	5.5	1.6	1.3	0.4
Employer contributions to Social Security and other supplemental benefits	7,303	7,166	1.9	0.8	0.6	0.2
Access charges	25,003	24,783	0.9	5.8	6.0	0.4
Depreciation	22,817	22,561	1.1	1.0	0.9	0.3
Lease and rental	3,442	3,592	-4.2	3.8	1.7	2.8
Purchased repairs	2,819	2,624	7.4	1.3	1.2	0.5
Insurance	171	170	0.4	11.4	13.1	1.9
Telephone and other purchased communication services	485	406	19.4	18.7	15.8	4.2
Purchased utilities	889	882	0.7	1.0	5.3	4.7
Purchased advertising	2,004	1,625	23.3	1.4	1.7	0.5
Taxes	5,106	4,930	3.6	1.4	1.3	0.1
Other operating expenses	25,939	25,186	3.0	1.0	0.7	0.6

Note: Detail may not add to total due to rounding.

Telephone communications showed a 3.4 percent increase in revenue in 1990 to $156.0 billion (Table 2). The highest rate of year-to-year growth was in cellular and radio telephone services, increasing 34.3 percent. Reflecting intense competition for market share among long-distance firms, telephone industry advertising expenses rose 23.3 percent between 1989 and 1990. Non-residential

Table 3. **Telephone Communications (SIC 4811)—Estimated Local, Long-Distance, Network Access Revenue, and Coefficients of Variation, by Type of Customer and Service: 1990**

Item	Millions of dollars			Coefficients of variation		
	Local service	Long-distance service	Network access	Local service	Long-distance service	Network access
Total Dollar Volume	39,231	68,128	29,189	0.9	4.0	0.7
Type of customer						
Residential	19,399	23,187	5,351	0.5	3.3	2.1
Nonresidential	19,832	44,941	23,838	0.5	1.7	0.5
Type of service						
Intrastate	(NA)	26,290	8,263	(NA)	2.2	0.7
Interstate	(NA)	41,839	20,926	(NA)	1.4	0.3

NA Not available.

Note: Detail may not add to total due to rounding.

Table 4. **Radio and Television Broadcasting Services (SIC 483)—Estimated Operating Revenue and Expenses, by Kind of Business: 1989 and 1990**

Item	Total broadcasting			Radio (SIC 4832)			Television (SIC 4833)		
	Millions of dollars		Percent change	Millions of dollars		Percent change	Millions of dollars		Percent change
	1990	1989	1990/1989	1990	1989	1990/1989	1990	1989	1990/1989
Operating Revenue									
Total	28,684	27,882	2.9	7,391	7,341	0.7	21,293	20,540	3.7
Station time sales	18,847	18,511	1.8	6,670	6,658	0.2	12,176	11,854	2.7
Network compensation	592	587	0.8	131	124	6.0	461	464	-0.6
National/regional advertising	7,090	6,868	3.2	1,712	1,687	1.5	5,378	5,181	3.8
Local advertising	11,164	11,056	1.0	4,827	4,847	-0.4	6,337	6,209	2.1
Network time sales	8,178	7,893	3.6	328	324	1.3	7,850	7,569	3.7
Other operating revenue	1,660	1,477	12.3	392	360	9.0	1,267	1,118	13.4
Operating Expenses									
Total	24,948	23,810	4.8	6,788	6,688	1.5	18,160	17,122	6.1
Annual payroll	6,681	6,478	3.1	2,636	2,577	2.3	4,045	3,901	3.7
Employer contributions to Social Security and other supplemental benefits	1,056	1,008	4.8	361	351	2.8	696	657	5.9
Broadcast rights	8,085	7,458	8.4	445	438	1.7	7,641	7,020	8.8
Music license fees	357	364	-1.8	152	151	0.7	205	212	-3.6
Network compensation fees	525	513	2.3	103	90	13.6	422	423	-0.1
Depreciation	1,372	1,377	-0.3	516	525	-1.7	856	852	0.5
Lease and rental	514	511	0.6	173	167	3.7	340	344	-0.9
Purchased repairs	249	244	2.0	86	84	3.0	163	160	1.5
Insurance	147	149	-1.4	69	70	-1.8	78	78	-1.0
Telephone and other purchased communication services	241	238	0.9	113	114	-1.0	128	124	2.8
Purchased utilities	255	250	2.1	98	95	3.0	157	155	1.6
Purchased advertising	951	963	-1.3	392	419	-6.6	559	544	2.8
Taxes	174	179	-3.0	61	62	-1.2	113	117	-3.9
Other operating expenses	4,341	4,079	6.4	1,582	1,544	2.5	2,758	2,535	8.8

customers were the source of almost $89 billion in telephone industry revenue, nearly two-thirds of all revenue for long-distance, local, and network access services (Table 3).

Table 4 shows U.S. television and radio broadcasters operating revenue of approximately $28.7 billion in 1990, up nearly 3 percent from 1989. At the same time, operating expenses rose 4.8 percent to $24.9 billion. Expenses for broadcast rights to first-run programs, feature films, syndicated programs and sporting events, accounted for 42.1 percent of total operating expenses for the television industry in 1990, and increased 8.8 percent from the previous year. Purchased advertising of radio broadcasters fell 6.6 percent from the prior year.

Table 5. **Cable and Other Pay Television Services (SIC 4899 pt.)—Estimated Operating Revenue and Coefficients of Variation: 1989 and 1990**

Item	Millions of dollars		Percent change 1990/1989	Percent of total		Coefficients of variation				
						Dollar volume		Year-to-year ratio 1990/1989	Percent of total	
	1990	1989		1990	1989	1990	1989		1990	1989
Operating Revenue										
Total cable and other pay television revenue	21,309	18,739	13.7	100.0	100.0	3.9	2.9	1.3	(X)	(X)
Advertising	1,602	1,254	27.7	7.5	6.7	2.3	1.9	0.7	2.9	2.2
Program revenue	1,103	861	28.2	5.2	4.6	2.9	2.8	0.6	4.1	3.6
Basic service	11,475	10,042	14.3	53.9	53.6	4.6	3.6	1.5	0.9	0.7
Pay and other premium service	5,643	5,284	6.8	26.5	28.2	3.7	2.7	1.4	1.1	1.1
Installation fees	330	298	10.9	1.6	1.6	6.0	5.9	1.0	2.8	3.9
Other cable and pay television revenue	1,156	1,000	15.6	5.4	5.3	4.5	3.4	1.6	1.9	1.9

X Not applicable.

Note: Cable and other pay television services include establishments primarily engaged in the dissemination of visual and textual television programs on a subscription or fee basis. Detail may not add to total due to rounding.

Revenue for cable and other pay television services rose 13.7 percent from 1989 to $21.3 billion in 1990 (Table 5). Subscription fees for providing basic services accounted for 53.9 percent of 1990 cable and other pay television revenue, and increased 14.3 percent from 1989.

A copy of the 1990 Annual Survey of Communication Services may be obtained for $1.50 by contacting the Government Printing Office in Washington, D.C., and referencing GPO stock number 003 024 080 93 1. The telephone number is (202) 783-3238. The 1991 survey is scheduled for release in December 1992. For further information, contact Thomas E. Zabelsky, Chief, Current Services Branch, Bureau of the Census. Mr. Zabelsky's telephone number is (301) 763-5528.

SERVICES ECONOMIC HIGHLIGHTS

CSI

Allen Sinai
Chief Economist, Boston Company Economic Advisors, Inc.

The Service Economy At a Glance
Better But Not Out of the Woods!

- ***Service Gross Domestic Product (GDP) Measured by Expenditures*** improved to a 2.6% annual rate in the first quarter, up from a 0.7% rate in the fourth quarter of 1991. Economic activity in the goods-producing sector increased 2.9%, the largest increase in three years—the result of an 11% increase in construction GDP. Overall GDP increased 2.7%, up from 0.4% in the previous quarter.
- ***Personal Consumption on Services*** rose at a 2.5% annual rate in the first quarter, moderating from 3.7% in the fourth quarter. Personal consumption of goods increased a large 8.2%, more than reversing a 4.4% decline in the fourth quarter. Monthly data for April and May show that personal consumption on services is continuing to show modest increases, a good sign of recovering.
- ***Private Service Exports*** increased at a 10% annualized rate in the first quarter of the year to a new record high. As a result, the private services trade surplus increased to a record $14.8 billion. For 1991, the private service surplus was revised to $52.2 billion, almost as large as the $73.4 billion merchandise trade deficit— and above it excluding oil imports.
- ***The Service Sector Leading Index***—which usually leads activity by about six months—showed a 2.9% increase in May, down from 3.1% in April. Growth of the coincident index, reflecting current economic conditions, also slowed, to only 0.7% in May.
- ***Service Employment*** declined by 21,000 in June, following increases in each of the previous six months. Year-on-year service employment is up 491,000. Sectors reporting higher year-on-year employment are health care, business services, and government. Retail and wholesale trade employment, however, are down compared to a year earlier. This suggests less momentum in services entering the third quarter.
- ***Consumer Service Inflation*** stabilized at a 4% rate, measured on a year-over-year basis. In May, inflation increased 4.1%, about the same as the 4.2% increase in April. Service price inflation has been moderating, helping consumer purchasing power and helping to set the stage for recovery.
- ***The Service Stock Price Index*** increased just 1.9% in May from April, standing 10.5% above its level a year earlier.

Bottom Line: Despite some growth in service GDP in the first quarter, evidence of a sustained recovery in the service economy is still lacking. While on balance, employment in the service sector has moved upward, it has not been evenly distributed throughout the sector. Almost all of the gains have been concentrated in health care, business services and government sectors, with no gains in finance, insurance and real estate. Employment in the wholesale and retail trade areas continues to decline. A more even pattern of improvement is necessary to ensure a solid recovery.

The service economy refers to the total economy, in which services activities are the dominant factor. The service economy comprises 68% of real production GNP and 77% of employment. Major segments are: Communications; Transportation; Public Utilities; Finance, Insurance and Real Estate; Wholesale and Retail Trade; Government; and "Service," a diverse category including Business Services, Personal Services, Professional and Health Services.

Chart 1
Real Gross Domestic Product
(Total and by Sector, Percent Change at Annual Rates)

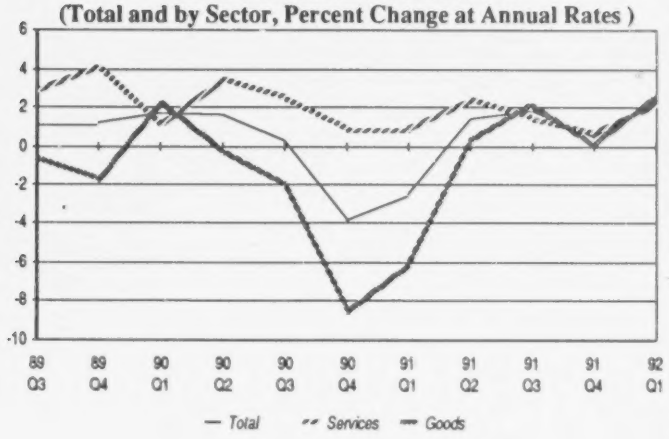


Chart 2
Leading Economic Indicator Indices
(Total Economy and Service Sector, Six-Month Smoothed, Percent Change at Annual Rates)

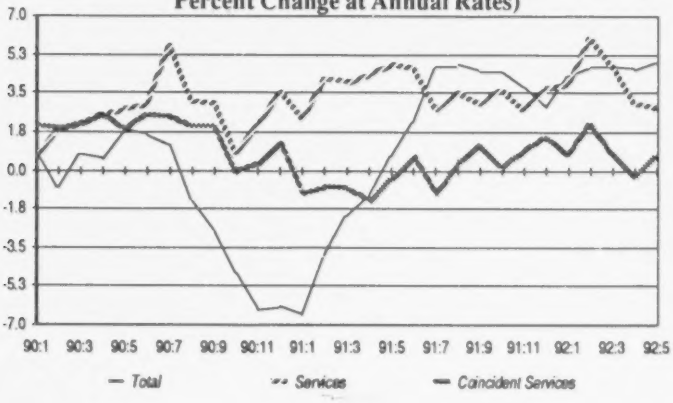
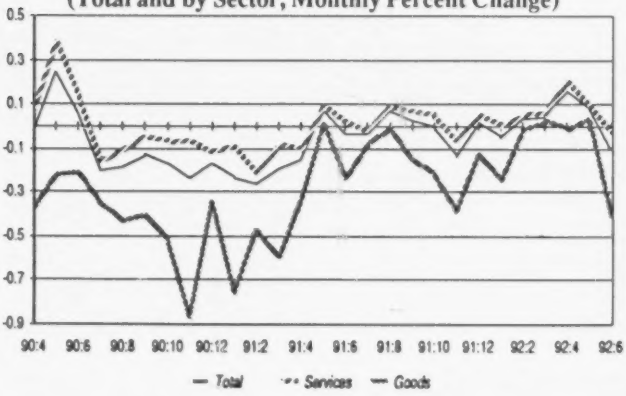


Chart 3
Employment Growth
(Total and by Sector, Monthly Percent Change)



Service GDP Picks Up

First -quarter service GDP—measured on the expenditure basis—increased 2.6%, at an annual rate, up from 0.7% and 1.5% in the last two quarters of 1991. Almost all of the growth in service GDP was contributed by the personal consumption and export sectors. The goods component of GDP, including construction, increased 2.9%, mostly a result of a large 11% increase in construction GDP—the largest increase in construction activity in almost eight years. Goods GDP, excluding construction, increased a modest 1.2%.

Service Leading Index Slows

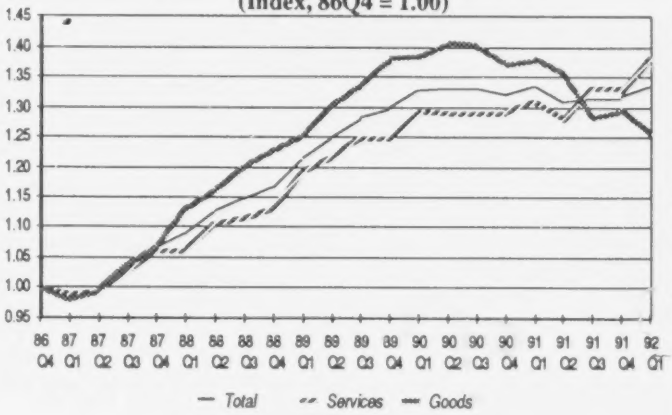
The 2.9% increase in the leading index for the service sector for May is the smallest since last November. Indeed, growth has slowed progressively representing a steady decline since it reached a nine-year high of 6% in February. Growth in the coincident index is also waning, reported at a mere 0.7% in May, following a 0.3% decline in April. The leading economic index for the overall economy, however, continued a steady, albeit slow upward trend, rising 4.9% in May from 4.6% in April.

The Services Sector Indices are produced by the Center for International Business Cycle Research, Columbia University.

Service Employment Grows, But Soft

In June, service sector employment declined 21,000, following gains in the previous six months. Compared to service employment a year earlier, the sector recorded a net gain of 491,000. Sectors showing higher employment are healthcare, up 288,000 since last June, business services, up 214,000 and government, up 191,000. Retail and wholesale trade reported lower employment than a year earlier. Employment in the goods sector continued its downward trend, a large 96,000 in June alone, with a loss of 365,000 over June 1991.

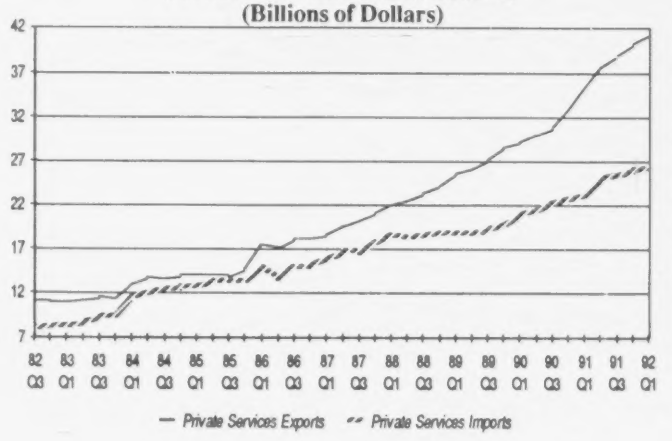
Chart 4
Plant & Equipment Expenditure
(Index, 86Q4 = 1.00)



Service Industry Spending on Plant & Equipment Higher

Current dollar spending on plant and equipment (P&E) by service industries increased at a large 16.8% annualized rate in the first quarter. Plant and equipment spending by goods-producing industries, declined, however, a large 11.9% from the fourth quarter, to reach its lowest level since the first quarter in 1989. Total P&E spending is now at the level it was a year earlier. Service industries are replacing equipment with new, lower cost items.

Chart 5
Private Services Trade Balance
(Billions of Dollars)

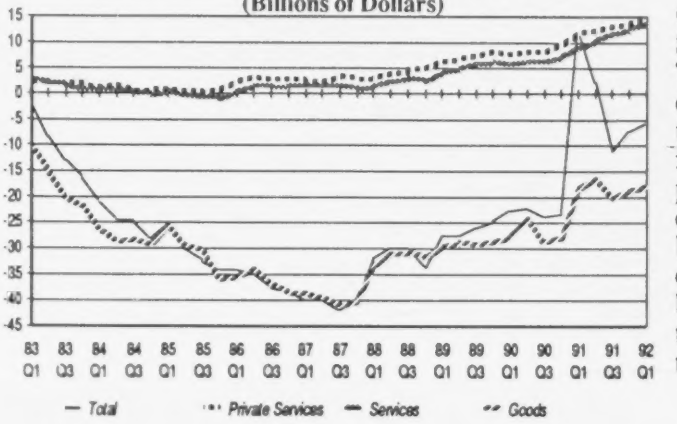


Private Services Trade Surplus Reaches New High

The trade surplus in private services increased to a record $14.8 billion in the first quarter from $12.2 billion a year earlier. Private service exports reached $41.2 billion in the first quarter, up 2.5% from the fourth quarter and 16.4% from a year earlier. For 1991 as a whole, the private service trade surplus was revised to $52.2 billion from the $43 billion originally reported.

* *Private services trade refers to private nonfinancial trade flows such as travel, tourism, education, passenger fares, financial services, and fees and royalties.*

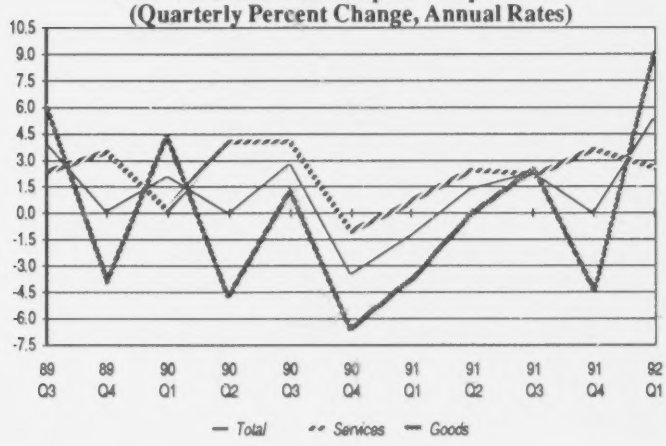
Chart 6
Current Account Balance and Components
(Billions of Dollars)



Current Account Balance Shows Small Deterioration

The current account balance was in deficit by $5.3 billion in the first quarter, improving from a $7.2 billion deficit in the fourth quarter. For 1991, the U.S. posted a small $3.7 billion deficit compared to $90.4 billion in 1990. This big swing resulted from the combination of an improved goods and services trade balance, and large transfer receipts in the first two quarters of the year due to the Gulf War.

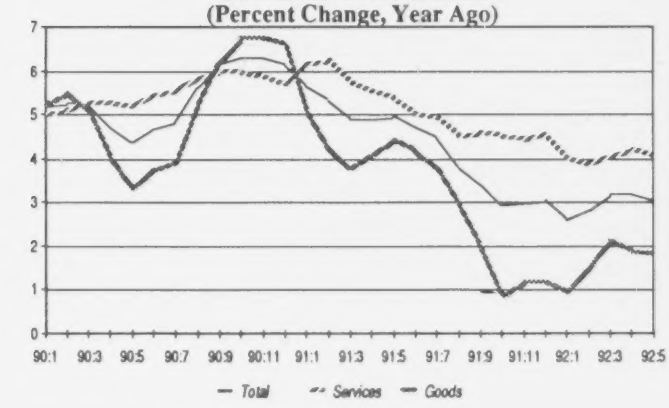
Chart 7
Real Personal Consumption Expenditures
(Quarterly Percent Change, Annual Rates)



Consumer Spending on Services Slows

Personal consumption expenditures on services after adjustment for inflation, increased 2.5% in the first quarter at an annual rate—a moderately healthy rate, but down from 3.7% in the fourth quarter. Spending on goods, which declined 4.4% in the fourth quarter, rebounded by 8.2% for the largest quarterly increase in four years. Monthly consumption data through May show that personal consumption on services contunues to increase, but at a slow pace.

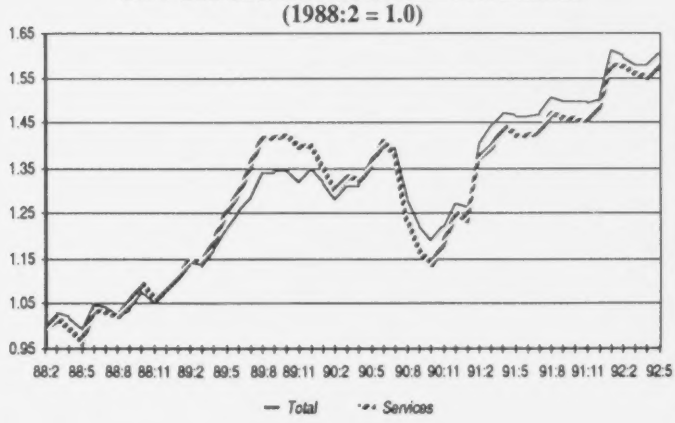
Chart 8
Consumer Price Indices
(Percent Change, Year Ago)



Service Inflation Steady

Average price increases for consumer services appear to have stabilized over the last three months at just about 4%. Measured on a year-over-year basis, service price inflation was 4.1% in May, essentially unchanged from 4.2% in April and 4.1% in March. Goods price inflation continued to decline in May, reported at 1.8%, down from 1.9% in April and 2.1% in March. Better service inflation can help to sustain recovery in the service economy.

Chart 9
S&P 500 and Service Stock Price Indices
(1988:2 = 1.0)



Service Stock Prices Pick Up

The service stock price index was up 1.9% in May from April and 10.5% from a year earlier. The S&P 500 stock price index recorded similar movements, up 1.8% in May from April and 9.7% from a year ago. The levels of both of these indexes have been essentially unchanged since January.

The Service Stock Price Index is based on S&P indices for 13 service industries and is compiled by the Center for International Business Cycle Research.

EMPLOYEE COMPENSATION OR EMPLOYMENT COST INDEX: TWO SIDES OF THE SAME COIN

by Allen Sinai and Zaharo Sofianou

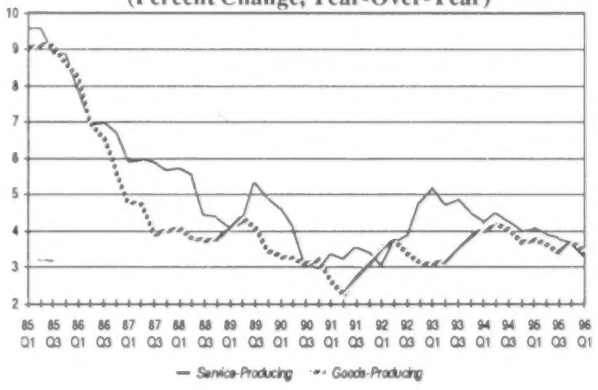
The Employment Cost Indices compiled by the Bureau of Labor Statistics consist of the Employee Compensation and Employee Wage and Salary indices. Employee compensation is the more comprehensive index, as it includes benefits as well as wages and salaries. This index has been available for just over ten years, while the index which measures only wages and salaries has been available for somewhat longer than that. As the name implies, the Employment Cost Indices have been developed primarily for the analysis of labor costs to employers. They can, however, also be used for measuring the absolute and relative change in wages and compensation for workers in the industrial sectors where these indices are available.

This study uses this set of data to analyze how workers in the service- and goods-producing sectors have done in terms of wages and compensation over the past decade. In addition, the study compares how employees in different service-producing industries fared. To make the comparison more meaningful, wage and salary and compensation data were adjusted for inflation to determine the real change in wages and salaries and compensation.

In brief, the results show that increases in pay were larger for employees in service-producing industries than those of the goods-producing sector (Chart 1). Nevertheless, pay increases within the service sector were not uniformly large. Instead, the largest pay increases, by far, were for employees in the services industries—a category which includes health care, education, business and personal services. Pay increases for employees in the retail trade sector were considerably smaller in nominal terms and worse when adjusted for inflation.

In all cases, compensation, which includes benefits such as paid vacation, holidays, insurance coverage, retirement and savings plans, social security, bonuses, and other benefits, increased faster than wages and salaries alone (Charts 2 and 3). Reasons for the increase in benefits include a rise in the compulsory social security tax rate, and a steady increase in health and insurance coverage costs. As a result, although compensation increased faster than wages and salaries, workers were not necessarily better off. In fact, it can be argued that pay increases were traded, in part, for more costly benefits.

Chart 1
Wage Growth in Service- Producing vs. Goods Producing Sectors
(Percent Change, Year-Over-Year)



Allen Sinai is Chief Economist and Zaharo Sofianou, Senior Economist, of The Boston Company Economic Advisors, Inc.

Chart 2
Service-Producing Sector:
Changes in Compensation, Benefits and Wages
(Percent Change, Year-Over-Year)

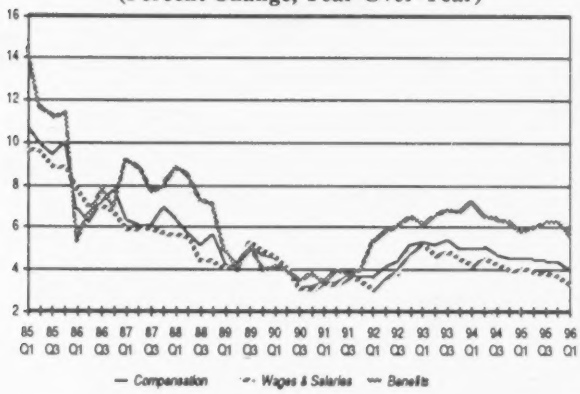
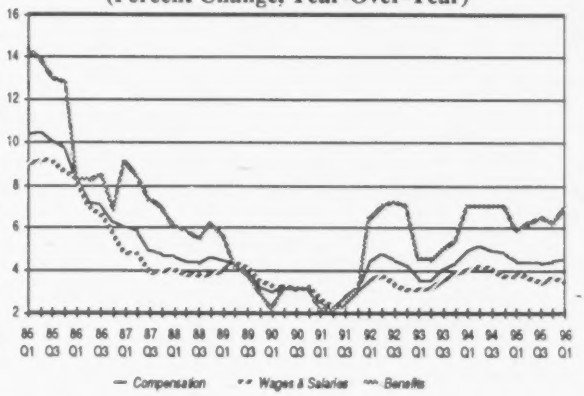


Chart 3
Goods-Producing Sector:
Changes in Compensation, Benefits and Wages
(Percent Change, Year-Over-Year)



Gain in Wages After Adjusting for Inflation Very Small

More importantly, the price-adjusted data show a very slight increase in average pay for all private sector employees since 1980. For service-producing employees, the average annual increase in wages and salaries adjusted for inflation was 0.3 percent, for a total increase since 1980 of 3.1 percent. For goods-producing workers, real wages and salaries declined an average of 0.3 percent per year for a total drop of 3.5 percent since 1980. Price-adjusted compensation, however, showed small increases for all industrial groups except employees in the construction and retail trade sectors (Table 1). Moreover, wage and compensation pay increases, both nominal and real, were faster in the first half of the decade than in the second. Adjusted for inflation, pay increases in all sectors were negative for a good part of the late 1980s. For employees in both service- and goods-producing industries, price-adjusted wage gains were positive in the first quarter of 1992 and last quarter of 1991, after about three years of declines (Charts 4 and 5).

Table 1
Increases in Wages and Salaries and Compensation
(Annual Average, 1980:1 to 1992:1)

	Nominal		Price-Adjusted	
	Wages and Salaries	Compen-sation	Wages and Salaries	Compen-sation
Private Industry Workers	5.3	5.8	0.0	0.5
Service Producing Industries	5.5	5.9	0.3	0.6
Transportation and Public Utilities	4.8	5.5	-0.4	0.3
Wholesale Trade	5.8	6.2	0.5	0.9
Retail Trade	4.6	5.0	-0.6	-0.2
Finance, Insurance and Real Estate	5.8	5.1*	0.5	0.5*
Services Industries	6.4	6.9	1.1	1.6
Goods Producing Industries	4.9	5.6	-0.3	0.3
Contract Construction	4.2	5.0	-1.0	-0.2
Manufacturing	5.1	5.7	-0.2	0.5
Manufacturing—Durable Goods	5.0	5.7	-0.2	0.4
Manufacturing—Non-Durable Goods	5.1	5.8	-0.1	0.5

** Change from 1985*

Sources: Bureau of Labor Statistics, The Boston Company Economic Advisors, Inc.

Pay Rises Faster in Services Than Goods

In the 1980s, both pay and benefits increased faster for workers in the service-producing sector than in the goods-producing industries. For the twelve years to 1992, the average annual increase in pay for service-producing employees was 5.5 percent, while that for employees in the goods-producing sectors increased at an average 4.9 percent rate. Similarly, the average annual increase in benefits for

Chart 4
Service-Producing Sector:
Growth in Nominal and Real Wages and Salaries
(Percent Change, Year-Over-Year)

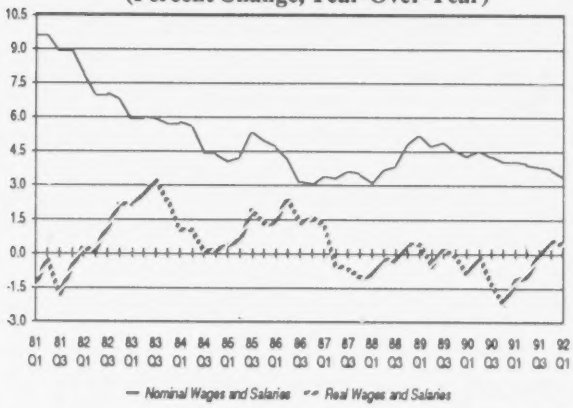
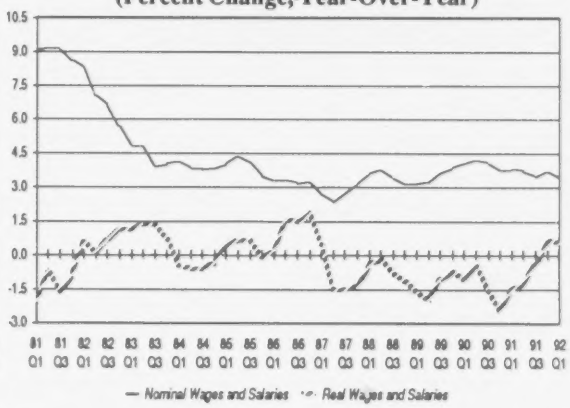


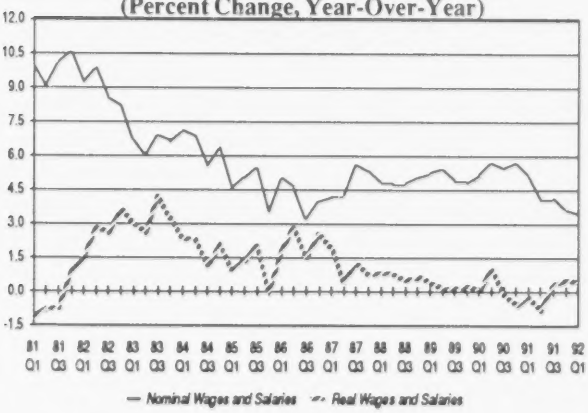
Chart 5
Goods-Producing Sector:
Growth in Nominal and Real Wages
(Percent Change, Year-Over-Year)



service-sector employees was 2 percent, while for employees in the goods-producing sector the increase was marginally smaller at 1.8 percent.

Part of the explanation why the average pay for workers in the goods-producing sector lagged service-producing industries is the ongoing shift in the economy to service-producing activities. At the same time, loss of union power, the fast rise in merchandise imports since 1983, and the associated competition U.S.-made goods faced from lower-priced foreign merchandise also limited pay increases in the goods sector. Another factor holding down the average pay increases for the goods-producing sector was a depressed construction sector where pay did particularly poorly over the whole period. This is in part due to the availability of cheaper immigrant labor in the first half of the period, and a sharp drop in the real estate sector in the second half of the period. On average, pay increases for construction workers were far below the average for total private industry. In fact, adjusted for inflation, pay increases for workers in the construction industry declined at a rate of 1 percent per year for a total of 10.4 percent between 1980 and 1992, with a smaller 0.2 percent per year decline (or a total of 2.3 percent since 1980) for total compensation.

Chart 6
Services Industries:
Growth in Nominal and Real Wages
(Percent Change, Year-Over-Year)



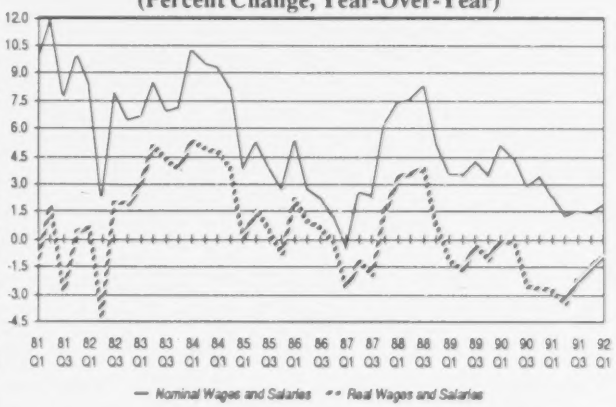
Service Sector Pay Increases Uneven

While pay increases were faster for workers in the service-producing sector than those in the goods-producing sector, not all service sector workers were given increases in wages and salaries at the sectoral average of 5.5 percent per year. The highest paid employees were in the catchall sector of *services industries*, for which the average annual increase in wages and salaries was 6.4 percent per year. Including benefits, the increase for total compensation was even larger, at 6.9 percent. Workers in this area were the highest paid in the economy. After adjusting this pay increase for rises in the

consumer price index, there is still a rise in the real wage rate of 1.1 percent per year or a total price-adjusted wage increase of 12.6 percent since 1980, despite a sharp slowdown in pay increases in the second half of the period. Including benefits, the increase is even larger, at 1.6 percent per year or a total increase of 18.5 percent since 1980 (Chart 6).

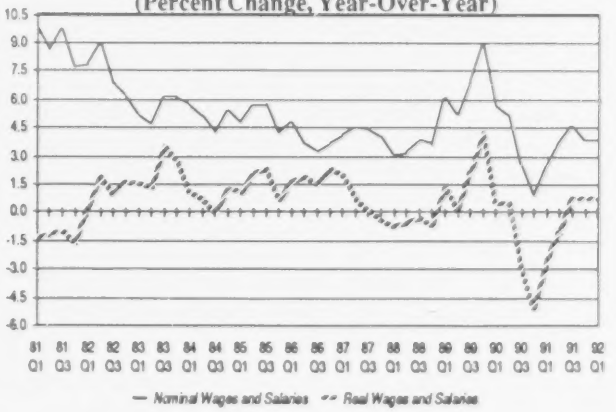
Employees in the *finance, insurance, and real estate* sector received the second highest pay increases in the service economy. The average annual increase in wages and salaries since 1980 was 5.8 percent. Data for compensation are only available since 1985 for this industry, and show a 5.1 percent average annual pay increase. Adjusting for inflation, the average annual increase in wages and salaries was 0.5 percent or a total real improvement in wages of 6 percent since 1980. All of the improvement, however, occurred before 1987. Wage and salary increases adjusted for inflation after 1989 were negative, partly as a result of the beleaguered real estate sector (Chart 7). Workers in this sector, as well as in construction continued to see declines in real wages through the first quarter of 1992, when workers in all other sectors in this study saw an increase in price-adjusted pay.

Chart 7
Finance, Insurance and Real Estate: Growth in Nominal and Real Wages
(Percent Change, Year-Over-Year)



The sector in which employees received the third-highest compensation and pay was *wholesale trade*, where the average annual wage and salary increase over the past twelve years was 5.8 percent. Including benefits, the average annual pay increase in compensation was 6.2 percent over the same period. Similarly, the price-adjusted annual average increases on both wages and salaries and compensation were above-average, at 0.5 percent for wages and 0.9 percent for compensation. The cumulative improvement in real pay since 1980 was 5.7 percent, while the improvement in real compensation was 10.4 percent (Chart 8).

Chart 8
Wholesale Trade Compensation: Growth in Nominal and Real Wages
(Percent Change, Year-Over-Year)



Employees in the *retail trade* and *transportation and public utilities* industries were among the lowest paid service-producing workers in private industry. Not adjusted for inflation, the average annual pay increase for workers in transportation and public utilities was 4.8 percent over the twelve-year period from 1980 to 1992, while that for retail trade workers was even lower, at an average of 4.6 percent per year. Workers in these two industries appear worse off in 1992 than in 1980 in terms

Chart 9
Retail Trade:
Growth in Nominal and Real Wages
(Percent Change, Year-Over-Year)

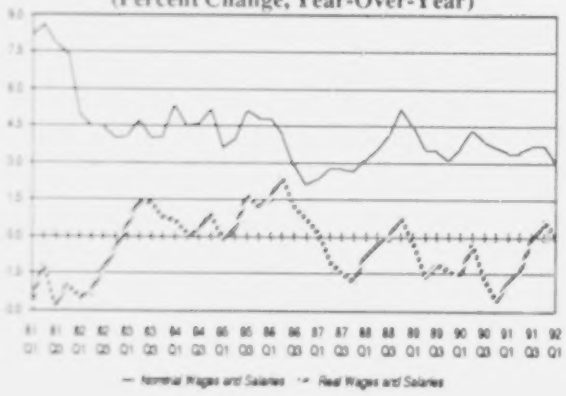
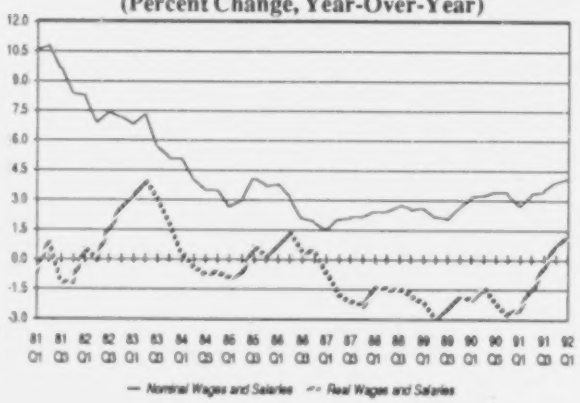


Chart 10
Transportation and Public Utilities:
Growth in Nominal and Real Wages
(Percent Change, Year-Over-Year)



of inflation-adjusted wages and salaries. For workers in the retail trade sector the decline in real wages and salaries was a cumulative 6.4 percent since 1980, or an average of 0.6 percent per year, while the decline in the price-adjusted wages and salaries for workers in the transportation and public utilities industry totaled 4.3 percent since 1980, for an annual average decline of 0.4 percent.

When benefits are included, however, workers in the transportation and public utilities industry had an annual average improvement of 0.3 percent per year for a total of 3 percent since 1980, while retail trade employees continued to be worse off by an overall 2.2 percent over the twelve-year period. This makes the retail trade employees the most poorly compensated workers within the service economy and almost as poorly compensated as workers in the construction industry (Charts 9 and 10).

Conclusions

This study shows that pay increases for American workers in the private sector have been very small over the past decade. Adjusted for inflation, private sector employees had no gains in wages and salaries since 1980; including benefits, the price-adjusted increase in compensation was 0.5 percent per year. Costly benefits, such as health care or insurance coverage accounted for the difference. Real purchasing power for workers, however, remained unchanged.

Looking at service- and goods-producing workers separately, however, real wages for goods-producing workers has declined since 1980 by an average of 0.3 percent per year, while those of service-producing employees showed an annual average increase of equal amount. Over the past twelve years, pay increases as well as increases in total compensation grew faster for workers in the service-producing sector than those in the goods-producing sector. Reasons for the discrepancy between the two sectors include the gradual, but steady, shift of emphasis in the economy from goods- to service-producing activities. At the same time, the fast rise of imports in the 1980s contributed to the slower pace of wage increases for workers in the goods sector.

The compensation and wage increase, however, was not uniform within the service-producing sector. Rather, workers in services industries, such as health care, education, business, and personal

services received the largest pay and benefit increases, while workers in the retail trade area received the lowest increases.

When the data for wages and salaries and compensation are adjusted for changes in inflation, the pay increases in most sectors are poor, with workers in the goods-producing sector worse off in the first quarter of 1992 compared with 1980. The standard of living for workers in the service producing sector has improved, although not uniformly. As a result, workers in the retail trade sector and in the transportation and public utilities industries are now worse off in terms of real pay than they were in 1980, while workers in the services industries, finance, insurance and real estate and wholesale trade are better off. Adding benefits, all service sectors are better off in price-adjusted terms, with the exception of workers in retail trade.

CSI

THE COALITION OF SERVICE INDUSTRIES was formed in 1982 to increase public awareness of the expanding role of the service sector in the U.S. economy. One of the priorities of the Coalition is to improve the adequacy of statistical programs in their measurement and analysis of the service sector.

THE SERVICE ECONOMY is a product of the CSI Task Force on Data Collection and Statistical Improvement. Comments or suggestions should be directed to Maria Eli of CSI at 202/508-8624.

CSI

Table 1
Summary of the Service Economy
(Monthly Indicators)

	1992:1	1992:2	1992:3	1992:4	1992:5	1992:6	1987	1988	1989	1990	1991
Total Employment—Millions of Persons	108.1	108.1	108.2	108.4	108.5	108.4	102.2	105.5	108.3	109.8	108.3
Services	84.6	84.6	84.7	84.8	84.9	84.9	77.5	80.4	83.0	84.8	84.5
Goods	23.5	23.5	23.5	23.5	23.5	23.4	24.7	25.2	25.3	25.0	23.8
Total Wages and Salaries—Billions of Dollars	2837.0	2870.6	2881.5	2879.8	2891.3	NA	2261.2	2440.5	2585.8	2738.9	2808.3
Services	2102.3	2132.4	2139.9	2135.9	2144.1	NA	1609.4	1741.5	1862.0	1993.5	2069.6
Goods	734.7	738.2	741.6	743.9	747.2	NA	651.8	699.0	723.8	745.3	738.8
Total Compensation %Change, Year-Over-Year	2.4	3.7	3.9	3.6	3.3	NA	7.4	7.9	6.0	5.9	2.5
Services	3.4	4.9	4.6	4.3	3.9	NA	9.0	8.2	6.9	7.1	3.8
Goods	-0.4	0.6	1.8	1.8	1.5	NA	3.7	7.2	3.5	3.0	-0.9
Consumer Price Index—All Urban %Change, Year-Over-Year	2.6	2.8	3.2	3.2	3.0	NA	3.7	4.1	4.8	5.4	4.2
Services	4.0	3.9	4.1	4.2	4.1	NA	4.1	4.6	4.9	5.5	5.1
Goods	1.0	1.5	2.1	1.9	1.8	NA	3.2	3.5	4.7	5.2	3.1
Services Leading Indicator Index (%)* –	3.9	6.0	4.7	3.1	2.9	NA	6.2	1.6	2.9	1.7	4.4
Leading Economic Indicator Index—total (%)*	4.3	4.7	4.7	4.6	4.9	NA	5.8	1.6	1.8	-0.7	-0.3
Services Coincident Indicator Index (%)*	0.8	2.2	0.9	-0.3	0.7	NA	3.6	3.8	2.7	2.0	0.0
Service Industries Stock Price Index	136.1	135.7	134.1	133.4	135.9	NA	95.6	88.3	111.5	110.7	122.3
S&P 500 Stock Price Index	416.1	412.6	407.4	407.4	414.8	NA	286.8	265.8	322.8	334.6	376.2

* *Growth rate expressed in six-month smoothed percent changes at annual rate.*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Center for International Business Cycle Research and The Boston Company Economic Advisors, Inc.

Table 2
Summary of the Service Economy
(Percent Change, SAAR, Except Where Indicated)

	1990:4	1991:1	1991:2	1991:3	1991:4	1992:1	1987	1988	1989	1990	1991
Gross Domestic Product (87 Dollars)	-3.9	-2.5	1.4	1.8	0.4	2.7	3.1	3.9	2.5	1.0	-0.7
Services	0.9	0.9	2.5	1.5	0.7	2.6	3.8	3.6	2.3	2.6	1.6
Goods and Construction	-8.6	-6.1	0.3	2.2	0.1	2.9	2.4	4.2	2.8	-0.6	-3.1
Construction	-11.6	-20.8	-3.1	-5.4	4.9	11.0	-0.2	-0.4	-0.9	-2.1	-10.1
GNP—Product Measure (82 Dollars)	—	—	—	—	—	—	3.4	4.5	2.5	NA	NA
Services	—	—	—	—	—	—	3.0	4.3	3.2	NA	NA
Goods	—	—	—	—	—	—	4.3	4.7	1.1	NA	NA
Manufacturing	—	—	—	—	—	—	6.1	7.7	1.3	NA	NA
Agri./Mining/Construction	—	—	—	—	—	—	0.9	-1.4	0.6	NA	NA
Consumption Expenditures	-3.5	-1.3	1.4	2.3	0.0	5.0	2.8	3.6	1.9	1.2	-0.1
Services	-0.9	0.7	2.5	2.2	3.7	2.5	3.9	3.7	2.0	2.3	1.7
Goods	-6.6	-3.7	0.1	2.6	-4.4	8.2	1.6	3.5	1.8	0.0	-2.3
Plant and Equipment Expenditures—Current Dollars	-2.9	4.1	-7.9	2.5	0.8	5.9	2.5	11.0	11.4	5.3	-0.7
Services	0.2	5.2	-8.5	17.7	-0.9	16.8	2.9	8.3	11.2	5.2	1.6
Goods	-7.9	2.4	-7.0	-19.3	3.8	-11.9	1.7	15.7	11.6	5.5	-4.4
Corporate Profits—Current Dollars %Change, Year-Over-Year	-10.1	-11.3	-9.8	1.9	8.5	13.5	20.2	15.9	0.7	-5.5	-3.3
Services	-2.6	-2.2	-2.0	10.1	9.1	8.5	8.2	4.7	3.8	1.7	3.4
Goods	-21.9	-26.5	-22.6	-11.3	7.4	24.7	47.6	34.9	-3.3	-15.7	-14.7

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics and The Boston Company Economic Advisors, Inc.

Table 3
Summary of the Service Economy
(Billions of 1987 Dollars, SAAR, Except Where Indicated)

	1990:4	1991:1	1991:2	1991:3	1991:4	1992:1	1987	1988	1989	1990	1991
Gross Domestic Product (87 Dollars)	4855.1	4824.0	4840.7	4862.7	4868.0	4900.9	4540.0	4718.6	4836.9	4884.9	4848.8
Services	2481.8	2487.6	2502.7	2511.8	2516.2	2532.4	2267.3	2349.7	2402.8	2464.9	2504.6
Goods and Construction	2373.2	2336.4	2338.1	2350.9	2351.7	2368.5	2272.7	2368.9	2434.0	2420.0	2344.3
Construction	444.6	419.4	416.1	410.4	415.3	426.3	478.2	476.3	472.1	462.0	415.3
GNP—Product Measure (82 Dollars)	—	—	—	—	—	—	3845.3	4016.9	4117.7	NA	NA
Services	—	—	—	—	—	—	2583.0	2695.1	2782.0	NA	NA
Goods	—	—	—	—	—	—	1262.3	1321.8	1335.7	NA	NA
Manufacturing	—	—	—	—	—	—	852.2	917.4	929.0	NA	NA
Agri./Mining/Construction	—	—	—	—	—	—	410.1	404.4	406.7	NA	NA
Consumption Expenditures	3251.8	3241.1	3252.4	3271.2	3271.1	3311.3	3052.2	3162.4	3223.0	3262.6	3259.0
Services	1783.1	1786.3	1797.2	1806.8	1823.1	1834.4	1637.4	1698.5	1732.9	1772.9	1803.3
Goods	1468.7	1454.8	1455.2	1464.4	1448.0	1476.9	1414.8	1463.9	1490.1	1489.7	1455.6
Plant and Equipment Expenditures—Current Dollars	530.1	535.5	524.6	527.9	528.9	536.5	409.2	454.2	506.0	532.8	529.2
Services	330.3	334.5	327.1	340.7	340.0	353.4	260.4	282.2	313.9	330.2	335.6
Goods	199.8	201.0	197.4	187.1	188.9	183.0	148.8	172.1	192.1	202.6	193.6
Corporate Profits—Current Dollars	232.1	241.2	254.4	250.4	251.9	273.8	233.9	271.2	273.1	258.0	249.5
Services	153.2	166.2	171.5	166.3	167.2	180.3	146.8	153.7	159.5	162.3	167.8
Goods	78.9	75.0	82.9	84.1	84.7	93.5	87.1	117.4	113.6	95.7	81.7
Current Account Balance—Quarterly Rates	-22.7	12.2	2.4	-11.1	-7.2	-5.3	-163.5	-126.7	-101.1	-90.4	-3.7
Services Balance	9.3	9.4	10.8	12.0	13.1	14.2	8.2	12.7	25.8	32.1	45.3
Private Services Balance *	10.4	12.2	12.6	13.4	14.0	14.8	11.5	17.9	30.5	35.4	52.2
Exports	33.0	35.4	37.7	39.0	40.2	41.2	79.5	92.5	107.4	122.8	152.3
Imports	-22.6	-23.2	-25.2	-25.6	-26.1	-26.5	-67.9	-74.5	-76.8	-87.4	-100.0
Merchandise Trade Balance	-27.8	-18.3	-16.4	-20.2	-18.5	-17.5	-159.6	-127.0	-115.7	-108.9	-73.4

* *Private Services Balance is the balance on Service exports and imports excluding receipts and payments on investments and government transactions.*

Sources: Bureau of Economic Analysis and The Boston Company Economic Advisors, Inc.

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THE SERVICE ECONOMY

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Services and the NAFTA: Extending the Borders of Business

Lawrence A. Weinbach

The North American Free Trade Agreement (NAFTA), initialled in San Antonio, Texas a few weeks ago by the chief trade negotiators of Canada, Mexico and the United States, creates significant new business opportunities for companies operating in the $4.2 trillion North American services market. Although the agreement will not take effect unless approved by the three countries' legislatures, it still sets a new standard by which the private sector will judge future trade agreements. But the euphoria over these accomplishments on a regional basis should not be allowed to obscure the continuing need to bring the Uruguay Round services negotiations to a successful conclusion.

Business Potential Enormous

It is not an overstatement to claim that the NAFTA will open hundreds of billions of dollars of business in the service sector of the North American economy to new competition.

Trade in services, defined as cross-border sales, should receive a significant boost. Experience under the Canada-U.S. Free Trade Agreement (CFTA) provides some evidence of the potential. Services trade between the two countries has doubled to nearly $26 billion since that agreement was signed in 1988, compared with just a 40 percent increase during the five years prior to the CFTA. U.S.-Mexican services trade, which now exceeds $16 billion, could show similar dramatic growth under the NAFTA.

Mr. Weinbach is Managing Partner – Chief Executive of Arthur Andersen & Co., S.C.

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Cross-border sales of services, however, are not the central issue. Most services require on-site production and delivery and, therefore, service providers need a local presence through investment or contractual arrangements if they are to compete effectively in other markets. The NAFTA makes it possible, in many cases for the first time, for U.S. firms to tap into Mexico's $145 billion services market. It also builds upon the CFTA to give U.S. investors better access to Canada's $370 billion service sector. Likewise, companies in Canada and Mexico are assured of access to the United States' $3.67 trillion services market.

As experience is gained under the NAFTA other business benefits can be anticipated. For example, companies capitalizing on the resource advantages of each country should be more effective competitors in the global market. And eventual moves toward regulatory harmonization could lead to significant cost savings for service companies.

Services Rules Well Drafted

Services rules are integrated into the NAFTA in a way that is likely to lead to more far-reaching and successful results than any previous trade agreement. Unlike previous trade pacts, which treat services as something apart, the NAFTA integrates services into the full range of rights and responsibilities, relegating to separate chapters only those aspects of services that are truly unique in policymakers' eyes.

For service industries some of the key aspects of the agreement, which apply to manufacturers as well, are:

- The new rules on investment, which eliminate virtually all barriers and discriminatory treatment (although some service sectors are excluded), and which should improve investor confidence through a new approach to the settlement of investor disputes;

- The intellectual property rules, which establish the highest standard of protection for copyrights, patents, and trademarks yet achieved in a trade agreement;

- The rules on temporary entry of business persons, which build upon similar rules in the CFTA to assure that professional, technical and managerial personnel will not be delayed in crossing the border or denied access to other markets in North America; and

- Government procurement rules, which open purchases by government agencies and state enterprises to competition from non-domestic suppliers in North America.

In addition to these rules applying to all businesses, the agreement addresses specific issues of interest to services through:

- A chapter on cross-border trade in services, which guarantees the right of a service provider in one country to sell into the other without establishing a commercial presence and assures that provider of non-discriminatory regulatory treatment; and

- Special rules addressing financial services, land transportation, telecommunications and professional services.

GATT Still Needed

Enthusiasm for the NAFTA among service providers has led to suggestions that the North American agreement be adopted as the model for the multilateral agreement being negotiated in the Uruguay Round. Failing that, some have argued that a series of similar bilateral or regional agreements be substituted for the multilateral system altogether. While understandable, coming from a business community tired of waiting six long years for a conclusion to the Uruguay Round, these suggestions are neither practical nor are they likely to be effective in addressing business needs.

Trying to substitute NAFTA provisions for the draft Uruguay Round text on services would cause the multilateral negotiations to unravel. The text is a carefully balanced compromise among the 108 nations involved in those negotiations; the more the United States (or Canada or Mexico) presses to rewrite it, the more others will demand that their particular, often contrary, interests be accommodated. This does not mean, however, that the experience of the NAFTA has nothing to offer. The agreement's clear success in achieving the liberalization demanded by the United States, while addressing the legitimate adjustment concerns of Mexico in such sectors as financial services, is a very useful model for dealing with similar issues between developed and developing countries in the Uruguay Round.

Neither is the NAFTA, or a series of NAFTA-like agreements, a substitute for an effective multilateral agreement. After all, Canada and Mexico together still only account for about 17 percent of U.S. service exports and 16 percent of service imports into the U.S. And while the U.S. market is proportionately more important to Canada and Mexico, it is by no means the only market in which companies from these countries sell services. Moreover, while a series of bilateral or regional agreements might encompass greater shares of service imports and exports, it would not adequately address the operating needs of global service companies. These firms are operating less and less on a "hub and spoke" model, and increasingly as networks in which human, financial and intellectual resources are transferred from one location to another worldwide—wherever necessary to serve customer needs. Only a functioning multilateral system facilitates this operating requirement.

* * * * * *

In sum, the NAFTA represents a significant victory for the American, Canadian, and Mexican trade negotiators. It will open billions of dollars in business to new competition from North American service providers. It demonstrates a maturing of policymakers' understanding of the regulatory needs of service companies, and it sets new standards by which future services trade agreements will be assessed. But the globalization of markets and companies suggest that regional agreements, no matter how effective within their limited purview, are no substitute for a well-functioning worldwide system for services trade and investment.

SERVICES ECONOMIC HIGHLIGHTS

CSI

Allen Sinai
Chief Economist, Boston Company Economic Advisors, Inc.

The Service Economy At a Glance—Better Days to Come ?

- ***Service Gross Domestic Product (GDP) Measured by Expenditures*** increased a small 0.4%, at an annual rate, in the second quarter, down from 1.8% in the first quarter of the year. Economic activity in the goods-producing sector was up 2.8%, down from 4.2% in the first quarter—the result of a sharp drop in the rate of growth in construction. *This slow a pace of growth in services essentially means a recession.*

- ***Personal Consumption on Services*** increased 1.2% at an annual rate in the second quarter, down from a 2.2% rate in the first quarter. Personal consumption of goods fell 1.7%, after increasing 8.6% in the previous quarter. Data for July and August point to renewed strength for consumption of services in the third quarter.

- ***Private Service Exports*** fell 0.6%, after a 3.5% increase in the first quarter, while service imports increased 2.4%. This led to a drop in the private services trade surplus to $13.9 billion, from $14.8 billion in the first quarter. However, the service trade surplus for the first half of the year stood at $28.7 billion, well above the $24.7 billion surplus for the first half of 1991. *Services trade still is a U.S. economy strong suit.*

- ***The Service Sector Leading Index*** showed a sharp 5.8% increase in August, up from 3.4% in July. The increase was the largest in five months. The coincident index, which reflects current economic conditions, increased 2.5%, up from a 0.1% drop in July. *Thus, the index suggest better days ahead in services.*

- ***Service Employment*** declined by 11,000 in September, following a 33,000 drop in August. Year-on-year service employment is up 553,000. Sectors which have contributed to the higher employment over last year were business, health care and government. The sectors with the greatest job losses were wholesale and retail trade. The recent data are not encouraging.

- ***Consumer Service Price Inflation*** stabilized at a 3.9% rate in August, measured on a year-over-year basis—unchanged from July. Service price inflation has edged down in recent months helping to stabilize overall price increases by moderating the effect of higher goods inflation.

- ***The Service Stock Price Index*** declined 0.9% in August, but was still up almost 7.5% from a year earlier. Service company stock prices are holding up despite the weak economy.

Bottom Line: In the first half of the year, economic activity in the service sector was hit with slowdowns or declines in every major sector, but some signs of better times are indicated. The long-sought recovery is likely to start by year-end, although at a slow and uneven pace. The rapid pace of spending on plant and equipment by service industries will help position the service sector for faster growth in 1993.

The service economy refers to the total economy, in which services activities are the dominant factor. The service economy comprises 68% of real production GNP and 77% of employment. Major segments are: Communications; Transportation; Public Utilities; Finance, Insurance and Real Estate; Wholesale and Retail Trade; Government; and "Service," a diverse category including Business Services, Personal Services, Professional and Health Services.

Chart 1
Real Gross Domestic Product
(Total and by Sector, Percent Change at Annual Rates)

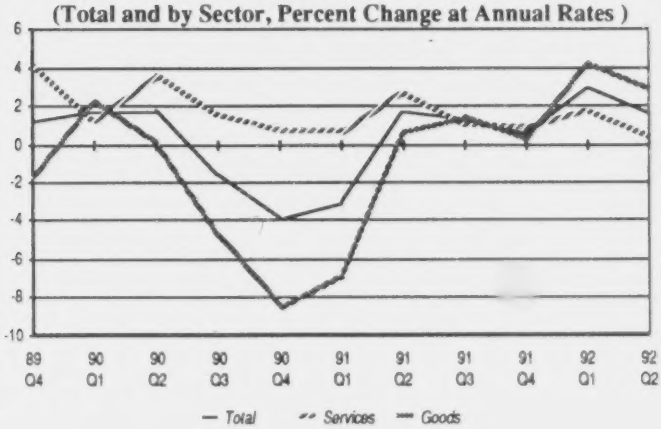


Chart 2
Leading Economic Indicator Indices
(Total Economy and Service Sector, Six-Month Smoothed, Percent Change at Annual Rates)

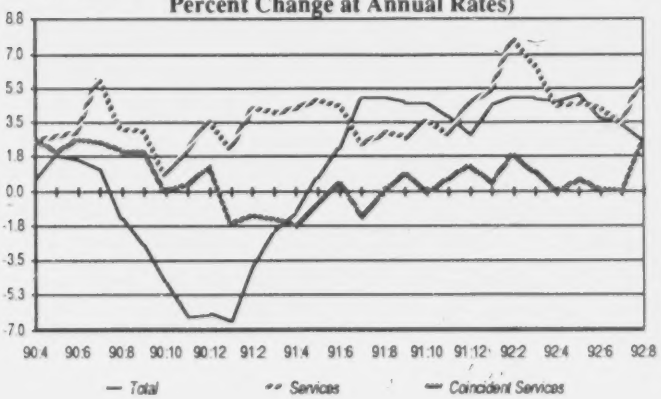
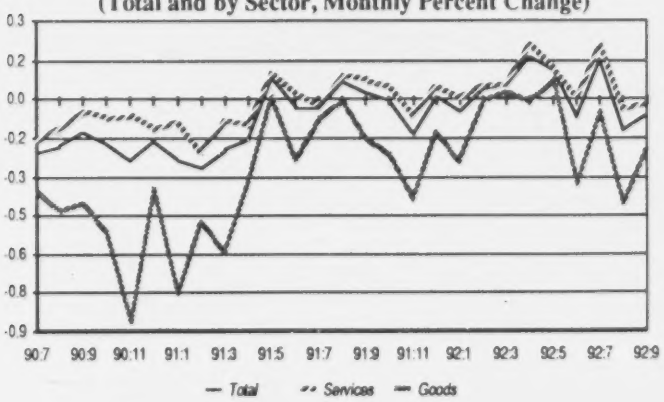


Chart 3
Employment Growth
(Total and by Sector, Monthly Percent Change)



Service GDP Growth Slows

Second-quarter service GDP—measured on an expenditure basis—grew at an annual rate of only 0.4%, down from 1.8% in the first quarter. The slowdown in service GDP growth was due to declines in service exports and federal government purchases of services. The goods component of GDP grew at an annual rate of 2.8%, down from 4.2% in the first quarter. However, excluding construction (which increased 3.6% after growth of 16.2% in the first quarter), goods GDP increased 2.7%—up from 1.7% in the first quarter.

Service Leading Index Picks Up

The leading index for the service sector increased 5.8% in August, up from 3.4% in July, and the largest increase since March. The coincident service index also rebounded in August—the largest increase in over two years—growing 2.5%, following a 0.1% drop in July. Growth in the leading index for the overall economy continued to slow, however, showing a 2.5% rise in August, down from 3.3% in July and 3.7% in June.

The Service Sector Indices are produced by the Center for International Business Cycle Research, Columbia University.

Service Employment Declines

Service-sector employment declined by 11,000 in September, following a 33,000 drop in August. The two-month losses were concentrated in wholesale trade, business services and state government. Compared to year-earlier levels, service jobs are up 553,000. Employment in the goods sector, down 46,000 in September, followed a 95,000 drop in August. The goods sector, which had 21.5% of total employment in September, was responsible for over 80% of the total employment drop. Compared to year-earlier levels goods-sector employment is off by 152,000.

Chart 4
Plant & Equipment Expenditures
(Index, 87Q1 = 1.00)

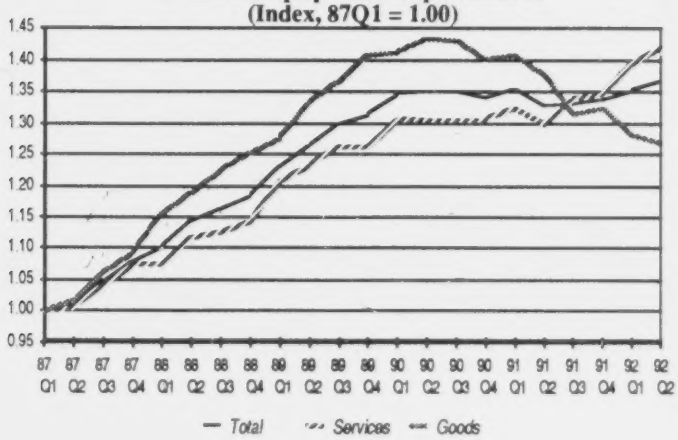


Chart 5
Private Services Trade Balance
(Billions of Dollars)

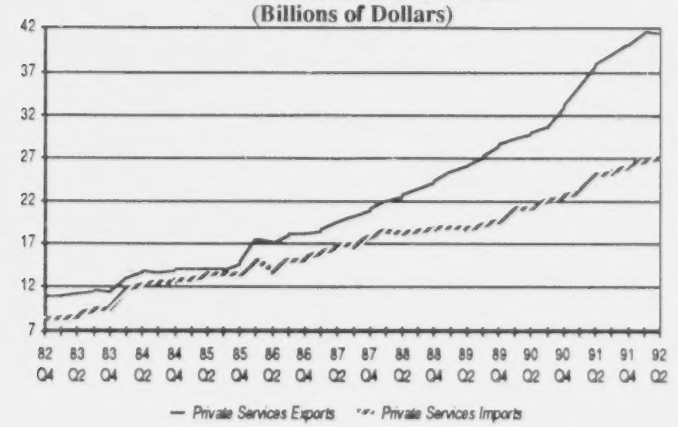
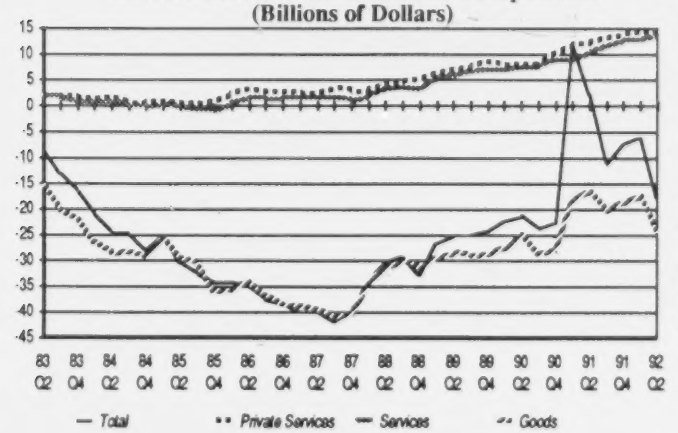


Chart 6
Current Account Balance and Components
(Billions of Dollars)



Service Sector Spending on Plant & Equipment Slows

Current dollar spending on plant and equipment (P&E) by service industries increased an annualized 8.3% in the second quarter, down from a 14.9% rate in the previous quarter. The second quarter data confirms that service industries continue to upgrade equipment. P&E spending by goods-producing industries declined 4.1% in the second quarter, less than the 12.5% drop in the previous quarter. Most of the outlays are in information processing and communucations.

Private Services Trade Surplus Down

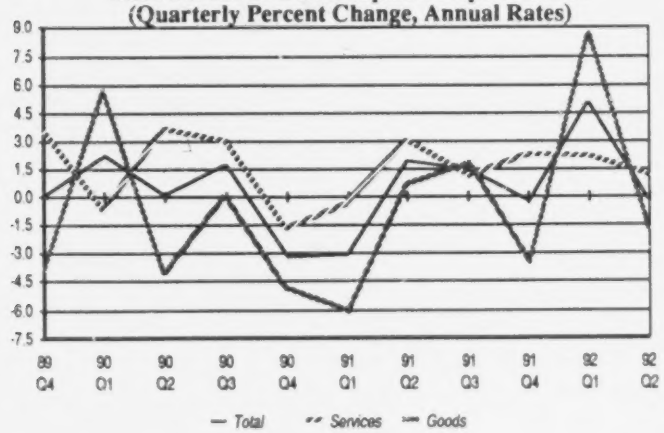
The trade surplus in private services for the second quarter was $13.9 billion, down from a record $14.8 billion in the previous quarter, but above the $12.6 billion recorded a year earlier. For the first half of the year the $28.7 billion trade surplus is 16.2% larger than the $24.7 billion recorded in the first half of 1991. The U.S. is still doing extremely well in services trade, but weak economies overseas are having a negative effect.

* *Private services trade refers to private nonfinancial trade flows such as travel, tourism, education, passenger fares, financial services, and fees and royalties.*

Current Account Balance Deteriorates

The current account balance was in deficit by $17.8 billion in the second quarter, widening from a $5.9 billion deficit in the first. This reverses three straight quarters of progressively smaller deficits. The sharp second quarter deterioration leaves the current account deficit for the first half of the year at $23.7 billion, compared to a surplus of $14.6 billion for the first half of 1991, and a $3.6 billion deficit for 1991 as a whole.

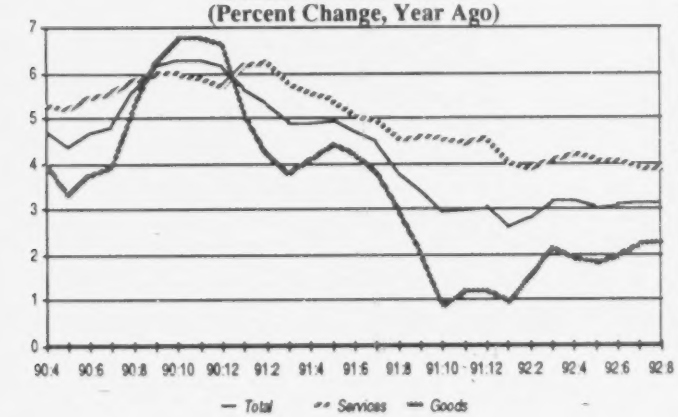
Chart 7
Real Personal Consumption Expenditures
(Quarterly Percent Change, Annual Rates)



Consumer Spending on Services Slows

Real personal consumption expenditures on services increased 1.2% in the second quarter, slowing from a 2.2% rate in the first. While all major service categories showed increases, a large 2.9% decline in the "other services" category—concentrated in a 50% drop in brokerage and investment consumption expenditures—accounted for the slowdown in the total. Spending on goods fell 1.7%, after a 8.6% increase in the first quarter. Data for July and August point to a possible rebound in consumer spending on services and essentially unchanged spending on goods.

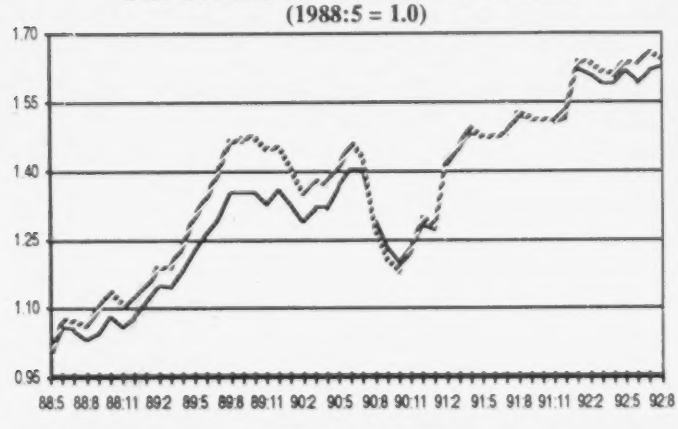
Chart 8
Consumer Price Indices
(Percent Change, Year Ago)



Service Inflation Settles at Lower Rate

Prices of consumer services were up 3.9% in August from a year earlier, the same as the year-over-year increase in July. Goods price inflation edged up in August with a year-over-year increase of 2.3%—up from 2.2% in July, and 2.0% in June. The overall consumer price index increased 3.1% in August, down from 3.2% in July. Service price inflation is still higher than in the goods sector, but is slowly diminishing.

Chart 9
S&P 500 and Service Stock Price Indices
(1988:5 = 1.0)



Service Stock Prices Inch Down

The stock price index for service companies was down a marginal 0.9% in August from July, but up almost 7.5% from a year earlier. The S&P 500 stock price index posted an equally marginal gain of 0.7% in August from July, and was up 7.3% from August of last year. Neither index has moved much since January, with the S&P 500 rising a slight 0.4% and service stock prices increasing 0.2%. A disappointing economy is causing a disappointing stock market performance

The Service Stock Price Index is based on S&P indices for 13 service industries and is compiled by the Center for International Business Cycle Research.

THE SERVICE SECTOR: NEW OPPORTUNITIES AT RISING WAGES

by Allen Sinai and Zaharo Sofianou

The subject of wages is a recurring theme when the service sector of the U.S. economy is compared to the goods sector. The prevailing view is that pay in goods-producing jobs is considerably higher, and that all service sector jobs are low-paying. Analyzing the data, this turns out to be a myth! The results of this study show that average pay in the service sector is only $1.53 per hour lower than average pay in the manufacturing sector; and excluding the low-paid retail trade sector, which accounts for 21.2 percent of the work force, the difference in pay between manufacturing and service-producing jobs is only a small $0.41 per hour. Moreover, pay increases have occurred faster in the service sector, closing the wage gap between services and manufacturing. (See Chart 1 below). At this rate, average pay in the service-producing sector should exceed that in the manufacturing sector within the next five to six years.

Here are some of the facts about pay:

- On average this year, pay in the private service-producing sector has been $9.87 per hour. For manufacturing, the pay for the same period averaged $11.40 per hour—a difference of $1.53 per hour.

- What is not taken into account in these computations is that manufacturing jobs make up about 20.3 percent of the labor force, compared to 73.9 percent for the service sector (Table 1).

- It is natural to expect that, as the larger sector, services should include a wider range of wage rates. Within the service-producing sector, the retail trade category is the lowest paid. Retail trade is 21.2 percent of the labor force, (somewhat more than all of manufacturing), and pays an average of $7.11 per hour. Food store employees earn an average $3.54 per hour, while those working in eating and drinking places make $5.27 per hour.

- *Service-sector workers outside retail trade, however, earn an average of $10.99 per hour—only a little lower than the $11.40 per hour paid in the manufacturing sector. Non-retail trade service workers make up 52.7 percent of the work force in the private sector.*

- Within the non-retail trade service sector, workers in transportation and public utilities, comprising 6.4 percent of the work force, earn $13.42 per hour; workers in wholesale trade earn $11.35 per hour and account for 6.7 percent of the work force; while the 9.4 percent of the labor force employed by the health service sector earn an average of $11.28 per hour. Legal services employees, only 1 percent of the work

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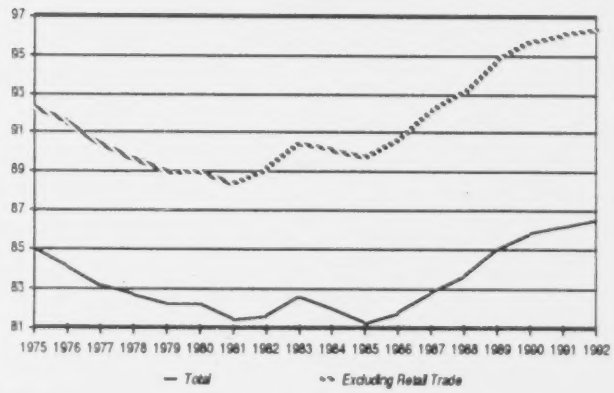
Allen Sinai is Chief Economist and Zaharo Sofianou, Senior Economist, of The Boston Company Economic Advisors, Inc.

Chart 1
Service Sector Wages as a Proportion of Manufacturing Wages
(Percent)



force, earn a high $14.95 per hour. *As a result, without straining to include smaller subcategories earning high wages, workers in the above service industries, which account for 23.5 percent of the private sector work force, earn as much as workers in the manufacturing sector (which only accounts for 20.3 percent of the work force).*

Wage Determinants: Demand, Supply, Skills

It is important to emphasize that in a free market economy workers will generally be paid in accordance with their skills, as well as the relative scarcity of the particular skill in their field. Highly educated and skilled workers generally are paid more than unskilled workers, provided there is demand for their profession. Since there is a more readily available supply of unskilled workers than of skilled workers, it makes sense that pay for unskilled workers is lower. This is true whether a job is in the goods or the service sector.

Another important factor contributing to the level of wages is the degree of unionization. Unions can act in ways to reduce the supply of labor in a particular occupation, and by doing so keep the wage rate higher. In general, labor in the manufacturing sector is more widely unionized than in the service sector. It is not clear what the average manufacturing wage rate would be if labor were not unionized, but it is safe to say that workers in that sector would be paid less than curent wage levels.

The Importance of "Low-Paying" Jobs

Skill levels required in the retail trade sector are relatively low, the potential supply of available workers is large, and most retail jobs are pleasant and pose no serious threat to workers' lives—all factors which contribute to lower compensation.

These "low-paid" service jobs, however, are necessary to a growing economy. Many jobs in retail trade pay minimum wage, but provide low-skilled workers with the opportunity to enter the labor force and earn income which could not otherwise have been earned in other sectors. In addition to providing jobs to low-skilled workers, the low-skill requirement permits a higher degree of substitution among workers which results in increased flexibility in the form of hours. Jobs in the retail trade sector, for example, allow students and parents of school-age children to work part-time and pursue other, perhaps more important, aspects of their lives. While workers in the manufacturing sector have some flexibility in the form of shifts, the job skill required makes worker substitution more difficult.

Service Sector: The Fall Guy?

Although the average wage rate in the service-producing sector is lower than the average in the goods-producing sector, it is also true that at $7.11 per hour earned in the retail trade sector, 21.2

Table 1
Comparative Pay Per Hour in Goods and Service Sectors

	Average Wage Rate by Industry (Dollars Per Hour)						Proportion of Labor Force Employed in the Private Sector	
	1975	1980	1985	1990	1991	1992*	1975	1992*
Total Private	4.53	6.66	8.57	10.01	10.33	10.53	100.00	100.00
Service-Producing Sector	4.10	5.98	7.75	9.30	9.64	9.87	63.70	73.90
Service-Producing Ex-Retail	4.45	6.48	8.56	10.36	10.74	10.99	43.41	52.65
Transportation & Pub. Utilities	5.88	8.87	11.39	12.96	13.24	13.42	7.30	6.39
Wholesale and Retail Trade	3.73	5.48	6.84	7.86	8.11	8.28	27.40	27.92
Wholesale Trade	4.72	6.95	9.15	10.79	11.15	11.35	7.11	6.68
Retail Trade	3.36	4.88	5.94	6.75	6.95	7.11	20.29	21.24
Finance, Insurance & Real Estate	4.06	5.78	7.94	9.97	10.40	10.76	6.69	7.46
Services	4.02	5.85	7.89	9.83	10.22	10.48	22.31	32.12
Hotels, Motels, and Tourist Courts	2.80	4.45	5.83	6.98	7.16	7.37	1.44	1.77
Personal Services	3.07	4.37	5.94	6.96	7.14	7.30	1.26	1.25
Business Services	NA	NA	NA	9.48	9.75	9.96	2.73	5.81
Motion Pictures	NA	NA	NA	10.95	11.81	11.57	NA	0.44
Amusement and Recreation Services	NA	NA	NA	8.14	8.10	8.04	NA	1.25
Health Services	3.81	5.68	8.06	10.40	10.96	11.28	6.64	9.41
Legal Services	5.11	7.35	10.51	14.16	14.52	14.95	0.55	1.01
Miscellaneous Services	NA	NA	10.42	13.79	14.91	15.51	NA	0.04
Goods-Producing Sector	5.25	7.80	10.15	11.51	11.82	11.99	36.30	26.10
Mining	5.95	9.16	11.98	13.68	14.18	14.51	1.21	0.72
Construction	7.30	9.92	12.32	13.77	13.98	14.04	5.66	5.06
Manufacturing	4.83	7.28	9.54	10.83	11.18	11.40	29.43	20.33
Durables	5.15	7.75	10.09	11.35	11.75	11.97	17.13	11.58
Non-Durables	4.37	6.55	8.72	10.12	10.44	10.66	12.31	8.75

* *Year-to-date*

Sources: The Boston Company Economic Advisors, Inc. and the Bureau of Labor Statistics

percent of the employed work force is earning an average wage rate of 62.2 percent of the $11.40 per hour average in the manufacturing sector. But, while wages in the retail trade sector have always been less than those in the manufacturing sector, the discrepancy has increased in recent years. In 1979, workers in the retail trade sector earned 68 percent of the average wage rate in manufacturing.

What has contributed to the relative decline in retail trade wages? Certainly, the higher rate of general unemployment, at 7.4 percent in 1992 compared with 5.8 percent in 1979, is a contributing factor to the relative decline in retail trade wages. The availability of a larger supply of labor due to a higher rate of unemployment, in turn, suppresses the wage rate in the lowest skill sector.

In addition to this cyclical factor, longer-term trends which have worked to reduce the labor force employed in the manufacturing sector, such as labor-saving capital equipment, have exerted downward pressure on wages in the service sector, particularly in retail trade. Over the same period, the share of manufacturing as a proportion of the employed labor force declined from 28.5 percent in 1979 to 20.3 percent in 1992, while the share of service-sector employment increased from 64.2 percent in 1979 to 73.9 percent in 1992. Between 1979 and 1992, manufacturing employment declined 12.3 percent, while that of the service-producing sector increased 39.4 percent. By

absorbing a larger proportion of the labor force, the service sector also has been forced to forgo higher wages, while at the same time, the absolute and relative declines in manufacturing employment preserved the higher wage rate for the remaining manufacturing sector workers.

Conclusion: The Myth of "Low-Paying" Service Sector Jobs

Apart from the retail trade sector, which has necessary but "low-paying" jobs , it is important to stress that pay in the remaining service industries cannot be classified as "low". So-called "highly paid" manufacturing workers make up only 20.3 percent of the labor force, and while most are skilled, many are unionized. Indeed, the average wage rate in a number of service industries that make up a combined 23.5 percent of the labor force, such as health care, transportation and public utilities, legal services and wholesale trade, is about the same as that in the manufacturing industry.

Excluding retail trade from the service sector, the $10.99 per hour earned in that sector is not much lower than the $11.40 per hour earned by workers in manufacturing. More importantly, wage increases in the service sector have occurred faster than in the manufacturing sector. Over the past ten years, wages in the service sector increased 3.9 percent per year; for non-retail trade jobs, average pay increases were at a faster 3.1 percent per year. In the manufacturing sector, wages grew at an annual rate of 3.3 percent. As a result, the average wage rate in the non-retail service sector is now 96 percent of wages paid manufacturing—compared to 90 percent in 1983 (Chart 1). At this rate, wages in the service sector, excluding retail, could be higher than those in the manufacturing industry within five to six years.

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THE COALITION OF SERVICE INDUSTRIES was formed in 1982 to increase public awareness of the expanding role of the service sector in the U.S. economy. One of the priorities of the Coalition is to improve the adequacy of statistical programs in their measurement and analysis of the service sector.

THE SERVICE ECONOMY is a product of the CSI Task Force on Data Collection and Statistical Improvement. Comments or suggestions should be directed to Maria Eli of CSI at 202/775-1723.

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Table 1
Summary of the Service Economy
(Monthly Indicators)

	1992:4	1992:5	1992:6	1992:7	1992:8	1992:9	1987	1988	1989	1990	1991
Total Employment—Millions of Persons	108.4	108.5	108.4	108.6	108.5	108.4	102.2	105.5	108.3	109.8	108.3
Services	84.8	84.9	85.0	85.1	85.1	85.1	77.5	80.4	83.0	84.8	84.5
Goods	23.5	23.5	23.5	23.5	23.4	23.3	24.7	25.2	25.3	25.0	23.8
Total Wages and Salaries—Billions of Dollars	2890.6	2907.6	2905.7	2910.4	2929.8	NA	2261.2	2443.0	2585.8	2742.8	2812.2
Services	2149.4	2162.3	2162.9	2168.6	2188.4	NA	1609.4	1744.0	1862.0	1997.2	2074.8
Goods	741.2	745.3	742.8	741.8	741.4	NA	651.8	699.0	723.8	745.6	737.4
Total Compensation %Change, Year-Over-Year	3.7	3.7	2.8	3.4	3.7	NA	7.4	8.0	5.8	6.1	2.5
Services	4.6	4.6	3.6	4.4	4.9	NA	9.0	8.4	6.8	7.3	3.9
Goods	1.3	1.4	0.8	0.6	0.3	NA	3.7	7.2	3.5	3.0	-1.1
Consumer Price Index—All Urban, %Change, Year-Over-Year	3.2	3.0	3.1	3.2	3.1	NA	3.7	4.1	4.8	5.4	4.2
Services	4.2	4.1	4.0	3.9	3.9	NA	4.1	4.6	4.9	5.5	5.1
Goods	1.9	1.8	2.0	2.2	2.3	NA	3.2	3.5	4.7	5.2	3.1
Services Leading Indicator Index (%)*	4.4	4.5	4.2	3.4	5.8	NA	6.2	1.6	2.9	1.7	4.3
Leading Economic Indicator Index—Total (%)*	4.6	4.9	3.7	3.3	2.5	NA	5.8	1.6	1.8	-0.7	-0.3
Services Coincident Indicator Index (%)*	0.0	0.6	0.1	-0.1	2.5	NA	3.6	3.8	2.7	2.0	-0.4
Service Industries Stock Price Index	133.4	135.9	136.1	137.5	136.3	NA	95.6	88.3	111.5	110.7	122.3
S&P 500 Stock Price Index	407.4	414.8	408.3	415.0	417.9	418.5	286.8	265.8	322.8	334.6	376.2

* *Growth rate expressed in six-month smoothed percent changes at annual rate.*

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics, Center for International Business Cycle Research and The Boston Company Economic Advisors, Inc.

Table 2
Summary of the Service Economy
(Percent Change, SAAR, Except Where Indicated)

	1991:1	1991:2	1991:3	1991:4	1992:1	1992:2	1987	1988	1989	1990	1991
Gross Domestic Product (87 Dollars)	-3.0	1.7	1.2	0.6	2.9	1.5	3.1	3.9	2.5	0.8	-1.2
Services	0.6	2.7	1.0	0.8	1.8	0.4	3.8	3.6	2.3	2.5	1.4
Goods and Construction	-6.8	0.6	1.5	0.2	4.2	2.8	2.4	4.2	2.8	-0.8	-3.8
Goods	-3.9	0.9	2.3	-0.5	1.7	2.7	3.1	5.5	3.7	-0.3	-2.3
Construction	-18.7	-1.1	-2.2	3.9	16.2	3.6	-0.2	-0.4	-0.9	-3.1	-9.9
GNP—Product Measure (82 Dollars)	—	—	—	—	—	—	3.4	4.5	2.5	NA	NA
Services	—	—	—	—	—	—	3.0	4.3	3.2	NA	NA
Goods	—	—	—	—	—	—	4.3	4.7	1.1	NA	NA
Manufacturing	—	—	—	—	—	—	6.1	7.7	1.3	NA	NA
Agri./Mining/Construction	—	—	—	—	—	—	0.9	-1.4	0.6	NA	NA
Consumption Expenditures	-3.0	2.0	1.5	-0.3	5.1	-0.1	2.8	3.6	1.9	1.2	-0.6
Services	-0.3	3.0	1.2	2.3	2.2	1.2	3.9	3.7	2.0	1.8	1.1
Goods	-6.1	0.7	1.9	-3.4	8.6	-1.7	1.6	3.5	1.8	0.4	-2.6
Plant and Equipment Expenditures—Current Dollars	2.5	-6.7	1.2	2.5	4.5	3.9	2.5	11.0	11.4	5.3	-0.7
Services	3.3	-6.0	13.6	2.1	14.9	8.3	2.9	8.3	11.2	5.2	1.6
Goods	1.2	-8.1	-17.2	3.2	-12.5	-4.1	1.7	15.7	11.6	5.4	-4.5
Corporate Profits—Current Dollars %Change, Year-Over-Year	-2.0	-7.1	0.1	3.8	8.4	8.9	20.2	15.9	0.7	0.9	-1.5
Services	6.6	2.9	12.0	11.4	7.0	-0.2	8.2	4.7	3.8	5.6	8.0
Goods	-16.1	-22.6	-17.0	-9.1	11.3	27.6	47.6	34.9	-3.3	-5.8	-16.5

Sources: Bureau of Economic Analysis, Bureau of Labor Statistics and The Boston Company Economic Advisors, Inc.

Table 3
Summary of the Service Economy
(Billions of 1987 Dollars, SAAR, Except Where Indicated)

	1991:1	1991:2	1991:3	1991:4	1992:1	1992:2	1987	1988	1989	1990	1991
Gross Domestic Product											
(87 Dollars)	4796.7	4817.1	4831.8	4838.5	4873.7	4892.4	4540.0	4718.6	4838.0	4877.5	4821.0
Services	2480.5	2497.3	2503.7	2509.0	2520.1	2522.4	2267.3	2349.7	2403.9	2463.0	2497.6
Goods and Construction	2316.3	2319.7	2328.1	2329.4	2353.5	2370.0	2272.7	2368.9	2434.1	2414.5	2323.4
Goods	1903.1	1907.6	1918.3	1915.7	1924.0	1936.7	1794.5	1892.5	1961.7	1956.8	1911.2
Construction	413.2	412.1	409.8	413.7	429.5	433.3	478.2	476.3	472.5	457.7	412.2
GNP—Product Measure											
(82 Dollars)	—	—	—	—	—	—	3845.3	4016.9	4117.7	NA	NA
Services	—	—	—	—	—	—	2583.0	2695.1	2782.0	NA	NA
Goods	—	—	—	—	—	—	1262.3	1321.8	1335.7	NA	NA
Manufacturing	—	—	—	—	—	—	852.2	917.4	929.0	NA	NA
Agri./Mining/Construction	—	—	—	—	—	—	410.1	404.4	406.7	NA	NA
Consumption Expenditures	3223.5	3239.3	3251.2	3249.0	3289.3	3288.5	3052.2	3162.4	3223.3	3260.4	3240.8
Services	1768.5	1781.8	1787.0	1797.4	1807.3	1812.9	1637.4	1698.5	1731.0	1764.6	1783.7
Goods	1455.0	1457.5	1464.2	1451.6	1482.0	1475.6	1414.8	1463.9	1492.3	1495.8	1457.1
Plant and Equipment Expenditures—											
Current Dollars	534.3	525.0	526.6	529.9	535.7	540.9	409.2	454.2	506.0	532.7	528.9
Services	333.5	328.4	339.0	340.8	352.9	359.9	260.4	282.2	313.9	330.2	335.4
Goods	200.8	196.6	187.6	189.0	182.9	181.0	148.8	172.1	192.1	202.5	193.5
Corporate Profits—											
Current Dollars	269.4	275.9	270.0	270.2	292.0	300.4	233.9	271.2	273.1	275.5	271.4
Services	181.8	185.6	178.2	182.7	194.5	185.2	146.8	153.7	159.5	168.5	182.1
Goods	87.6	90.3	91.8	87.5	97.5	115.2	87.1	117.4	113.6	107.0	89.3
Current Account Balance—											
Quarterly Rates	12.2	2.4	-11.1	-7.2	-5.9	-17.8	-163.5	-126.7	-101.1	-90.4	-3.7
Services Balance	9.4	10.8	12.0	13.1	13.8	13.0	8.2	12.7	25.8	32.1	45.3
Private Services Balance *	12.2	12.6	13.4	14.0	14.8	13.9	13.4	20.3	33.9	41.1	52.2
Exports	35.4	37.7	39.0	40.2	41.6	41.3	86.8	100.7	118.0	138.1	152.3
Imports	-23.2	-25.2	-25.6	-26.1	-26.8	-27.4	-73.4	-80.4	-84.1	-97.0	-100.0
Merchandise Trade Balance	-18.3	-16.4	-20.2	-18.5	-17.2	-24.4	-159.6	-127.0	-115.7	-108.9	-73.4

* *Private Services Balance is the balance on Service exports and imports excluding receipts and payments on investments and government transactions.*

Sources: Bureau of Economic Analysis and The Boston Company Economic Advisors, Inc.

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